



Alcatel-Lucent 5620

SERVICE AWARE MANAGER

DOCUMENTATION MAP

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Contents

1 —	5620 SAM documentation overview	1-1
1.1	Purpose	1-2
1.2	Audience.....	1-2
1.3	Documentation conventions	1-2
	Measurement conventions	1-2
1.4	Working with PDFs	1-3
2 —	Accessing documentation	2-1
2.1	Obtaining 5620 SAM documentation.....	2-2
2.2	On-product documentation	2-2
	Help system tools	2-2
2.3	Documentation and resources on OLCS.....	2-2
	Documentation updates	2-3
	5620 SAM product alerts	2-3
	Tips for using OLCS	2-3
2.4	Open-access documentation	2-3
3 —	Documentation map	3-1
3.1	5620 SAM customer documentation and tools	3-2
	Alarm Reference	3-3
	CPAA Setup and Installation Guide	3-3
	CPAM Release Description	3-3
	CPAM Release Notice	3-3
	CPAM User Guide	3-3
	Documentation Map.....	3-4
	Glossary.....	3-4
	Installation and Upgrade Guide	3-4
	Integration Guide	3-4
	LTE ePC User Guide	3-4

Contents

	LTE RAN User Guide	3-4
	MPR User Guide.....	3-5
	Network Element Compatibility Guide.....	3-5
	Nuage Virtualization Guide	3-5
	Optical Parameter Reference	3-5
	Optical User Guide	3-5
	Parameter Guide	3-5
	Parameter Search Tool.....	3-6
	Planning Guide.....	3-6
	Release Description.....	3-6
	Release Notice.....	3-6
	SAM-O Schema	3-6
	SAM-O SDK Sample Code Navigator.....	3-7
	SAM-O JMS Example.....	3-7
	SAM-O XML Reference	3-7
	Scripts and Templates Developer Guide.....	3-7
	Small Cells User Guide	3-7
	Statistics Management Guide.....	3-8
	System Administrator Guide.....	3-8
	System Architecture Guide	3-8
	Troubleshooting Guide	3-8
	User Guide	3-8
	XML OSS Interface Developer Guide.....	3-9
	Wireless OSS Interface Developer Guide	3-9
	Wireless Parameter Reference.....	3-9
	Wireless Release Description.....	3-9
3.2	Role-based entry points.....	3-9
	New users.....	3-10
	Experienced users.....	3-10
	Network planners and IT	3-10
	NOC operators	3-10
	OSS interface developers	3-11
	System administrators.....	3-11
	System testers	3-11
3.3	Function-based entry points.....	3-11
	Administration and monitoring.....	3-11
	Application development and integration.....	3-11
	Configuration management.....	3-11
	Fault management	3-12
	Installation and upgrade	3-12
	Network and service growth.....	3-12
	Network engineering and IT	3-12
	Performance management.....	3-12
4 —	New features	4-1
4.1	What's new in 5620 SAM Release 12.0	4-2
	Maintenance releases.....	4-2
4.2	5620 SAM Release 12.0 R5 features	4-2
	5620 SAM application enhancements.....	4-2
	5620 SAM system management enhancements	4-2
	5620 SAM wireless OSS enhancements	4-3

	5620 SAM XML OSS enhancements	4-3
	Data center management enhancements	4-4
	Device management enhancements	4-5
	GUI enhancements	4-6
	Network management enhancements	4-6
	OAM and service testing enhancements	4-9
	Protocol enhancements	4-10
	Policy enhancements	4-11
	Service management enhancements	4-14
	1830 PSS enhancements	4-18
	5780 DSC enhancements	4-21
	7210 SAS enhancements	4-22
	7450 ESS and 7750 SR enhancements	4-29
	7705 SAR enhancements	4-30
	7750 MG enhancements	4-30
	7950 XRS enhancements	4-35
	9500 MPR enhancements	4-35
	9471 WMM enhancements	4-36
	eNodeB enhancements	4-40
	OmniSwitch enhancements	4-41
	Small Cell enhancements	4-42
4.3	5620 SAM Release 12.0 R3 features	4-42
	7705 SAR enhancements	4-42
4.4	5620 SAM Release 12.0 R2 features	4-43
	5620 SAM wireless OSS enhancements	4-43
	9471 WMM enhancements	4-43
	9500 MPR enhancements	4-44
	eNodeB enhancements	4-45
4.5	5620 SAM Release 12.0 R1 features	4-45
	5620 SAM application enhancements	4-45
	5620 SAM system management enhancements	4-46
	5620 SAM wireless OSS enhancements	4-46
	5620 SAM XML OSS enhancements	4-46
	Device management enhancements	4-47
	GUI enhancements	4-48
	Network management enhancements	4-49
	OAM and service testing enhancements	4-51
	Protocol enhancements	4-53
	Policy enhancements	4-53
	Service management enhancements	4-57
	5780 DSC enhancements	4-61
	7210 SAS enhancements	4-61
	7450 ESS and 7750 SR enhancements	4-64
	7705 SAR enhancements	4-65
	7950 XRS enhancements	4-69
	9500 MPR enhancements	4-70
	7750 MG enhancements	4-70
	9471 WMM enhancements	4-75
	eNodeB enhancements	4-77

Contents

A.	Sample end user license agreement	A-1
A.1	Sample 5620 SAM end user license agreement	A-2
	1. LICENSE	A-2
	2. PROTECTION AND SECURITY OF LICENSED PROGRAMS	A-2
	3. TERM	A-2
	4. CHARGES.....	A-3
	5. SUPPORT AND UPGRADES	A-3
	6. WARRANTIES AND INDEMNIFICATION	A-3
	7. LIMITATION OF LIABILITY.....	A-4
	8. GENERAL.....	A-4

1 — 5620 SAM documentation overview

- 1.1 Purpose 1-2
- 1.2 Audience 1-2
- 1.3 Documentation conventions 1-2
- 1.4 Working with PDFs 1-3

1.1 Purpose

This document is designed to help users understand what is available in the 5620 SAM customer documentation suite and access relevant information with ease.

The *5620 SAM Documentation Map*:

- lists and describes all guides and tools in the customer documentation suite; see section [3.1](#)
- explains how to access the documentation suite and receive updates; see chapter [2](#)
- provides a variety of entry points into the documentation, depending on user needs:
 - links to new feature content; see section [4.2](#)
 - suggested reading based on user role; see section [3.2](#)
 - suggested reading based on functional area of interest; see section [3.3](#)

1.2 Audience

The *5620 SAM Documentation Map* may be useful for any 5620 SAM user. There are no prerequisites to reading this document.

1.3 Documentation conventions

Table [1-1](#) lists the conventions that are used throughout the documentation.

Table 1-1 Documentation conventions

Convention	Description	Example
Key name	Press a keyboard key	Delete
Italics	Identifies a variable	<i>hostname</i>
Key+Key	Type the appropriate consecutive keystroke sequence	CTRL+G
Key-Key	Type the appropriate simultaneous keystroke sequence	CTRL-G
*	An asterisk is a wildcard character, which means “any character” in a search argument.	log_file*.txt
↵	Press the Return key	↵
—	An em dash indicates there is no information.	—
→	Indicates that a cascading submenu results from selecting a menu item	Policies→Alarm Policies

Measurement conventions

Measurements in this document are expressed in metric units and follow the *Système international d’unités* (SI) standard for abbreviation of metric units. If imperial measurements are included, they appear in brackets following the metric unit.

Table 1-2 lists the measurement symbols used in this document.

Table 1-2 Bits and bytes conventions

Measurement	Symbol
bit	b
byte	byte
kilobits per second	kb/s

1.4 Working with PDFs

You can use the Search function of Acrobat Reader (File→Search) to find a term in a PDF of any 5620 SAM document. To refine your search, use appropriate search options (for example, search for whole words only or enable case-sensitive searching). You can also search for a term in multiple PDFs at once, provided that they are located in the same directory. For more information, see the Help for Acrobat Reader.

2 – *Accessing documentation*

- 2.1 Obtaining 5620 SAM documentation 2-2**
- 2.2 On-product documentation 2-2**
- 2.3 Documentation and resources on OLCS 2-2**
- 2.4 Open-access documentation 2-3**

2.1 Obtaining 5620 SAM documentation

You can obtain 5620 SAM customer documentation:

- from the product
- on the web

2.2 On-product documentation

The 5620 SAM on-product customer documentation is delivered in HTML and PDF formats. Choose Help→User Documentation from the 5620 SAM client GUI to open the help system in a web browser. For best results, use Internet Explorer or Firefox.

The help system opens to the User Documentation Home page, which provides a summary of and links to all 5620 SAM customer documents and tools.

Click on the Using the help system tab on the User Documentation Index page to find usage tips for navigating and searching within the on-product customer documentation.

You can return to the User Documentation Home page at any time by clicking on the Home icon, shown in Figure 2-1.

Figure 2-1 Home icon



Help system tools

The on-product help system includes certain tools not available on OLCS, such as 5620 SAM-O developer tools and a parameter search tool. See section 3.1 for more information.

2.3 Documentation and resources on OLCS

The 5620 SAM customer documentation is available for download from the Alcatel-Lucent Online Customer Support site (OLCS): <http://www.alcatel-lucent.com/myaccess>. If you are a new user and require access to this service, please contact your Alcatel-Lucent support representative.

Once registered, you may use the following direct link to the 5620 SAM user documentation, although login will still be required: <https://infoproducts.alcatel-lucent.com/aces/cgi-bin/dbaccessproddoc.cgi.edit?entryId=1-0000000002372>.

Release Notices and any other documents not delivered on-product are posted to this site.

Documentation updates

To receive an email when new or reissued 5620 SAM customer documents are posted to OLCS, subscribe to the notification service for [documentation updates](#).

5620 SAM product alerts

Product technical alerts are used to communicate important information to customers about released loads. You can view and subscribe to [product alerts for the 5620 SAM](#) from OLCS.

Tips for using OLCS

From the main [5620 SAM product page](#) on OLCS:

- click on Manuals and Guides to get to user documentation
- click on Release Information to get to release notices and release descriptions

From either the Manuals and Guides page or the Release Information page you can:

- filter results by release, content type, and format
- sort the results by title, doc number, or issue date
- search for documents

To download a zip of the PDF Manuals and Guides for a particular 5620 SAM release, filter the page by Release only, then click the Create Downloadable Zip File by Release link.

2.4 Open-access documentation

Unrestricted access to some documents within the 5620 SAM customer documentation suite is enabled. Using a web search engine, anyone can search for and read a variety of manuals related to this and other products in the IP Routing portfolio. Not all 5620 SAM materials are unrestricted; registration on OLCS is required to view certain guides.

3 — *Documentation map*

- 3.1 5620 SAM customer documentation and tools 3-2**
- 3.2 Role-based entry points 3-9**
- 3.3 Function-based entry points 3-11**

3.1 5620 SAM customer documentation and tools

This section lists all of the guides and tools that comprise the 5620 SAM customer documentation suite. Subsequent sections provide focus for users with different requirements.

Table 3-1 lists the documentation and tools in alphabetical order and indicates where they are available.

Table 3-1 Alphabetical list of 5620 SAM documents and tools

Document or resource (link to description)	Availability	
	OLCS	On-product help
Alarm Reference	PDF	HTML
CPAA Setup and Installation Guide	PDF	HTML
CPAM Release Description	PDF	HTML
CPAM Release Notice	PDF	HTML
CPAM User Guide	PDF	HTML
Documentation Map	PDF	HTML
Glossary	PDF	HTML
Installation and Upgrade Guide	PDF	HTML
Integration Guide	PDF	HTML
LTE ePC User Guide	PDF	HTML
LTE RAN User Guide	PDF	HTML
MPR User Guide	PDF	HTML
Network Element Compatibility Guide	PDF	—
Nuage Virtualization Guide	PDF	HTML
Optical Parameter Reference	PDF	HTML
Optical User Guide	PDF	HTML
Parameter Guide	PDF	HTML
Parameter Search Tool	—	HTML
Planning Guide	PDF	HTML
Release Description	PDF	HTML
Release Notice	PDF	—
SAM-O Schema	—	HTML
SAM-O SDK Sample Code Navigator	—	HTML
SAM-O JMS Example	—	HTML
SAM-O XML Reference	ZIP	HTML
Scripts and Templates Developer Guide	PDF	HTML
Small Cells User Guide	PDF	HTML

(1 of 2)

Document or resource (link to description)	Availability	
	OLCS	On-product help
Statistics Management Guide	PDF	HTML
System Administrator Guide	PDF	HTML
System Architecture Guide	PDF	HTML
Troubleshooting Guide	PDF	HTML
User Guide	PDF	HTML
XML OSS Interface Developer Guide	PDF	HTML
Wireless OSS Interface Developer Guide	PDF	HTML
Wireless Parameter Reference	PDF	HTML
Wireless Release Description	PDF	HTML

(2 of 2)

Alarm Reference

The *5620 SAM Alarm Reference* provides a description of all alarms supported on the 5620 SAM, including wireless and optical alarms, the raising and clearing conditions of each alarm, and the remedial action to fix the problem. The reference is organized by network element type.

CPAA Setup and Installation Guide

The *7701 CPAA Setup and Installation Guide* describes the hardware setup and software installation for the 7701 CPAA, the route analyzer component of the 5650 CPAM.

CPAM Release Description

The *5650 CPAM Release Description* provides information about the new features associated with a 5650 CPAM software release.

CPAM Release Notice

The *5650 CPAM Release Notice* provides important information about the 5650 CPAM software release and corresponding 7701 CPAA software release, including outstanding issues and restrictions. This document is not shipped with the on-product documentation and must be obtained from [OLCS](#).

CPAM User Guide

The *5650 CPAM User Guide* describes how to capture, inspect, visualize, and troubleshoot IGP and BGP topologies using the 5650 CPAM.

Documentation Map

This document, *The 5620 SAM Documentation Map* lists and describes the guides and resources delivered as part of the 5620 SAM information suite. It provides entry points into the documentation according to network type, functional area of interest, and user role. It also highlights new features, providing links to more information about what's new in the release.

Glossary

The *5620 SAM Glossary* defines terms and acronyms used in all of the 5620 SAM documentation.

Installation and Upgrade Guide

The *5620 SAM / 5650 CPAM Installation and Upgrade Guide* provides OS considerations, configuration information, and procedures for the following:

- installing, upgrading, and uninstalling 5620 SAM and 5650 CPAM software in standalone and redundant deployments
- 5620 SAM system migration to a different system
- conversion from a standalone to a redundant 5620 SAM system

Integration Guide

The *5620 SAM Integration Guide* provides procedures to allow the 5620 SAM to integrate with other Alcatel-Lucent products and third-party products. As of 5620 SAM Release 12.0 R5, the *Chronos SyncWatch Integration Guide* is no longer being delivered as a standalone document; instead, its contents are part of the *5620 SAM Integration Guide*.

LTE ePC User Guide

The *5620 SAM LTE ePC User Guide* describes how to discover, configure, and manage LTE ePC devices using the 5620 SAM. The guide is intended for LTE ePC network planners, administrators, and operators and is to be used in conjunction with other guides in the 5620 SAM documentation suite where management of ePC devices does not differ from other network elements.

Alcatel-Lucent recommends that you review the entire *5620 SAM LTE ePC User Guide* before you attempt to use the 5620 SAM in your LTE network.

LTE RAN User Guide

The *5620 SAM LTE RAN User Guide* describes how to discover, configure, and manage the Evolved NodeB, or eNodeB, using the 5620 SAM. The guide is intended for LTE RAN network planners, administrators, and operators and is to be used in conjunction with other guides in the 5620 SAM documentation suite where management of RAN devices does not differ from other network elements.

Alcatel-Lucent recommends that you review the entire *5620 SAM LTE RAN User Guide* before you attempt to use the 5620 SAM in your LTE network.

MPR User Guide

The *5620 SAM MPR User Guide* describes how to discover, configure, and manage 9500 MPR and 9500 MPRe devices using the 5620 SAM. The guide is intended for network planners, administrators, and operators and is to be used in conjunction with other guides in the 5620 SAM documentation suite where management of 9500 MPR and 9500 MPRe devices does not differ from other network elements.

Alcatel-Lucent recommends that you review the entire *5620 SAM MPR User Guide* before you attempt to use the 5620 SAM in your MPR network.

Network Element Compatibility Guide

The *5620 SAM Network Element Compatibility Guide* provides release-specific information about the compatibility of managed devices in 5620 SAM releases. This document is published frequently to show the compatibility of the 5620 SAM with new network element releases; always consult the latest version on [OLCS](#).

Nuage Virtualization Guide

The *Nuage Virtualization Guide* describes data center network management using the 5620 SAM and 5650 CPAM.

Optical Parameter Reference

The *5620 SAM Optical Parameter Reference* provides a list of all optical device parameters supported in the 5620 SAM.

Optical User Guide

The *5620 SAM Optical User Guide* describes how to discover, configure, and manage optical devices using the 5620 SAM. The guide is intended for optical network planners, administrators, and operators and is to be used in conjunction with other guides in the 5620 SAM documentation suite where management of optical devices does not differ from other network elements.

Alcatel-Lucent recommends that you review the entire *5620 SAM Optical User Guide* before you attempt to use the 5620 SAM in your optical network.

Parameter Guide

The *5620 SAM Parameter Guide* provides:

- parameter descriptions that include value ranges and default values
- parameter options and option descriptions
- parameter and option dependencies
- parameter mappings to the 5620 SAM-O XML equivalent property names

Parameters specific to LTE and Small Cells network elements are covered in the *5620 SAM Wireless Parameter Reference*.

Parameters specific to 1830 PSS network elements are covered in the *5620 SAM Optical Parameter Reference*.



Note — Although the *5620 SAM Parameter Guide* remains the single source of definitions for 5620 SAM-specific parameters (such as user security settings), users are encouraged to consult the Parameter Search Tool for node-configuration parameters.

Parameter Search Tool

The 5620 SAM online help system includes a Parameter Search Tool (PST) that allows you to look up parameters or 5620 SAM and 5650 CPAM forms. Expand the Parameter Guide in the help system navigation panel to access the PST. See “Parameter Search Tool” in the *5620 SAM User Guide* for more information about using the tool.

Planning Guide

The *5620 SAM Planning Guide* provides information about 5620 SAM scalability and recommended hardware configurations. This document provides pre-installation information required by network planners to plan a successful deployment.

Release Description

The *5620 SAM Release Description* highlights information about the new IP/MPLS, optical, MPR, and data center features associated with a 5620 SAM software release. There are separate Release Description documents for:

- 5650 CPAM
- Wireless

Release Notice

The *5620 SAM Release Notice* provides important information about the software release, including outstanding issues and restrictions. This document is not shipped with the on-product customer documentation and must be obtained from [OLCS](#).

SAM-O Schema

The 5620 SAM-O Schema is accessible through the on-product help system. API developers can browse the XML method definitions and types for all packages in the product in order to:

- determine the valid elements and parameters, and the data types for the elements
- create and enforce the rules for the number and order of child elements
- determine default and fixed values for elements and parameters

SAM-O SDK Sample Code Navigator

The 5620 SAM-O SDK Sample Code Navigator, accessible through the on-product help system, contains a library of XML scripts and example JMS messages. The scripts provide configuration and network management request samples and the corresponding responses to help developers for the OSS integration with the 5620 SAM-O. The samples can be used as a base to build 5620 SAM-O requests. There are example JMS messages in specific areas that would provides developers further assistance for integrating with 5620 SAM-O.

SAM-O JMS Example

The 5620 SAM-O JMS Test Example Code, accessible through the on-product help system, provides example JMS client code that subscribes to near-real-time events from 5620 SAM.

SAM-O XML Reference

The 5620 SAM-O XML Reference is a tool that may be used by OSS developers to view the XML interface to the product, including package descriptions, object property values and descriptions, and UML inheritance drawings.

Scripts and Templates Developer Guide

The *5620 SAM Scripts and Templates Developer Guide* provides information that allows users to develop, manage, and run CLI-based or XML-based scripts or templates.

The guide is intended for developers, skilled administrators, and operators who are expected to be familiar with the following:

- CLI scripting, XML, and the Velocity engine
- basic scripting or programming
- 5620 SAM functions

The HTML version of the *5620 SAM Scripts and Templates Developer Guide* contains additional resources for template development, such as XML API templates and a list of templatable object classes, template categories, and template examples. You can access the Template Development Information resources by expanding the Scripts and Templates Developer Guide in the contents panel of the information center and clicking on Template Development Information.

Small Cells User Guide

The *5620 SAM Small Cells User Guide* describes how to discover, configure, and manage small cells using the 5620 SAM. The guide is intended for wireless network planners, administrators, and operators and is to be used in conjunction with other guides in the 5620 SAM documentation suite where management of wireless devices does not differ from other network elements.

Statistics Management Guide

The *5620 SAM Statistics Management Guide* provides information about how to configure performance and accounting statistics collection and how to view counters using the 5620 SAM. Network examples are included.

System Administrator Guide

The *5620 SAM System Administrator Guide* provides information about the tasks performed by a user with a 5620 SAM admin role, including:

- 5620 SAM security management tasks such as setting up all required user accounts and user groups
- advanced configuration tasks such as configuring, maintaining, and administering the 5620 SAM operational environment
- routine maintenance tasks to maintain the 5620 SAM hardware and system integrity and efficiencies

System Architecture Guide

The *5620 SAM System Architecture Guide* is intended for technology officers, network planners, and system administrators to increase their knowledge of the 5620 SAM software structure and components. It describes the system structure, software components, and interfaces of the 5620 SAM. In addition, 5620 SAM fault tolerance, security, and network management capabilities are discussed from an architectural perspective.

Troubleshooting Guide

The *5620 SAM Troubleshooting Guide* provides task-based procedures and user documentation to:

- help resolve issues in the managed and management networks
- identify the root cause and plan corrective action for:
 - alarm conditions on a network object or customer service
 - problems on customer services with no associated alarms
- list problem scenarios, possible solutions, and tools to help check:
 - network management LANs
 - network management platforms and operating systems
 - 5620 SAM client GUIs and client OSS applications
 - 5620 SAM servers
 - 5620 SAM databases

User Guide

The *5620 SAM User Guide* provides information about using the 5620 SAM to manage the service-aware IP/MPLS network, including GUI basics, service configuration, and policy management.

The *5620 SAM User Guide* uses a task-based format that employs both high-level workflows and detailed procedures.

This guide is applicable for management of any network, however specific additional information for management of wireless, optical, microwave, or data center networks is covered in the following targeted user guides:

- [LTE ePC User Guide](#)
- [LTE RAN User Guide](#)
- [MPR User Guide](#)
- [Optical User Guide](#)
- [Nuage Virtualization Guide](#)
- [Small Cells User Guide](#)

XML OSS Interface Developer Guide

The *5620 SAM XML OSS Interface Developer Guide* provides information that allows you to:

- use the 5620 SAM XML OSS interface to access network management information
- learn about the information model associated with the managed network
- develop OSS applications using the packaged methods, classes, data types, and objects necessary to manage 5620 SAM functions

Wireless OSS Interface Developer Guide

The *5620 SAM Wireless OSS Interface Developer Guide* provides information about developing OSS applications for wireless networks, including information about the 3GPP OSS interface components and architecture, understanding the 5620 SAM-O schema in the context of LTE and small cells, compliance with 3GPP standards, and typical operational scenarios.

Wireless Parameter Reference

The *5620 SAM Wireless Parameter Reference* provides a list of all LTE ePC, LTE RAN, and small cells parameters supported in the 5620 SAM.

Wireless Release Description

The *5620 SAM Wireless Release Description* provides information about the LTE ePC, LTE RAN, and small cells features associated with the release.

3.2 Role-based entry points

Depending on your role, you may be more interested in some aspects of the 5620 SAM customer documentation than in others. The suggestions below are offered as a courtesy to assist you in locating information relevant to your role or experience level. These are “getting started” entry points into the documentation suite. Other reading may be required.

New users

- [Documentation Map](#)
- [System Architecture Guide](#)
- [User Guide](#)
- [Glossary](#)

Experienced users

- [Documentation Map](#) for what's new
- [Release Description](#)
- [Release Notice](#)

Network planners and IT

- [Planning Guide](#)
- [System Architecture Guide](#)
- [Installation and Upgrade Guide](#)
- [Integration Guide](#)
- [Release Description](#)
- [Release Notice](#)

NOC operators

For all NOC operators:

- [Documentation Map](#)
- [User Guide](#)
- [Troubleshooting Guide](#)
- [Alarm Reference](#)

For NOC operators managing wireless networks:

- [LTE ePC User Guide](#)
- [LTE RAN User Guide](#)
- [Small Cells User Guide](#)
- [Wireless Parameter Reference](#)

For NOC operators managing optical networks:

- [Optical User Guide](#)
- [Optical Parameter Reference](#)

For NOC operators managing data centers:

- [Nuage Virtualization Guide](#)

OSS interface developers

- [XML OSS Interface Developer Guide](#)
- [Wireless OSS Interface Developer Guide](#)
- [Parameter Search Tool](#)
- [SAM-O Schema](#)
- [SAM-O SDK Sample Code Navigator](#)
- [SAM-O JMS Example](#)
- [SAM-O XML Reference](#)

System administrators

- [Installation and Upgrade Guide](#)
- [System Administrator Guide](#)
- [Integration Guide](#)

System testers

- [Release Description](#)
- [What's new in 5620 SAM Release 12.0](#)

3.3 Function-based entry points

This section identifies the tools and guides related to specific network management functional areas.

Administration and monitoring

- [System Administrator Guide](#)
- [Statistics Management Guide](#)
- [Scripts and Templates Developer Guide](#)

Application development and integration

- [Integration Guide](#)
- [Scripts and Templates Developer Guide](#)
- [Wireless OSS Interface Developer Guide](#)
- [XML OSS Interface Developer Guide](#)

Configuration management

- [User Guide](#)
- [LTE ePC User Guide](#)
- [LTE RAN User Guide](#)
- [MPR User Guide](#)
- [Nuage Virtualization Guide](#)
- [Optical User Guide](#)

- [Parameter Guide](#)
- [Parameter Search Tool](#)
- [Small Cells User Guide](#)

Fault management

- [Alarm Reference](#)
- [Troubleshooting Guide](#)
- [Statistics Management Guide](#)

Installation and upgrade

- [Installation and Upgrade Guide](#)
- [Planning Guide](#)

Network and service growth

See the discovery and services chapters of the following user guides, as applicable to the managed network:

- [LTE ePC User Guide](#)
- [LTE RAN User Guide](#)
- [MPR User Guide](#)
- [Nuage Virtualization Guide](#)
- [Small Cells User Guide](#)
- [User Guide](#)

Network engineering and IT

- [Installation and Upgrade Guide](#)
- [Integration Guide](#)
- [Network Element Compatibility Guide](#)
- [Planning Guide](#)

Performance management

The [Planning Guide](#) lists performance targets, while the [Statistics Management Guide](#) describes statistics management and lists performance and accounting statistics per managed device. In addition, several of the targeted user guides contain statistics chapters describing the aspects of performance management that are unique to the management of those networks.

4 — *New features*

4.1	What's new in 5620 SAM Release 12.0	4-2
4.2	5620 SAM Release 12.0 R5 features	4-2
4.3	5620 SAM Release 12.0 R3 features	4-42
4.4	5620 SAM Release 12.0 R2 features	4-43
4.5	5620 SAM Release 12.0 R1 features	4-45

4.1 What's new in 5620 SAM Release 12.0

This chapter highlights new features for 5620 SAM Release 12.0 and provides pointers into the documentation for more information.

The *5620 SAM Release Description*, *5620 SAM Wireless Release Description*, and *5620 SAM-NV Release Description* provide full feature lists and highlight certain features with more detailed descriptions. The release description documents not only include the NMS features and nodal features that are documented in 5620 SAM customer documentation, they also identify the nodal features supported by the 5620 SAM but documented in the NE customer documentation.

Maintenance releases

Some releases may not be listed in this chapter, either because no new features are introduced or the features introduced do not require documentation.

4.2 5620 SAM Release 12.0 R5 features

The tables in this section list the features added in 5620 SAM Release 12.0 R5 and described in 5620 SAM customer documentation.

5620 SAM application enhancements

The following table lists 5620 SAM application enhancement features for this release of the 5620 SAM.

Table 4-1 5620 SAM application enhancements

Feature ID	Feature or function	Description	Book	See
SAM-35738	Standalone Power Management Dashboard application	<p>The new standalone Power Management Dashboard application allows you to view the following for 7950 XRS nodes in the network:</p> <ul style="list-style-type: none"> • detailed information about current and recent power usage • graphs and diagrams of power usage statistics • power management alarms 	<i>5620 SAM User Guide</i>	Chapter 3

5620 SAM system management enhancements

The following table lists 5620 SAM system management enhancement features for this release of the 5620 SAM.

Table 4-2 5620 SAM system management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-34858	ESM session on-demand retrieval	System option to disable QoS Override retrieval on ESM-related sessions.	<i>5620 SAM System Administrator Guide</i>	To configure 5620 SAM system preferences
SAM-35106	RHEL LVM support	Logical Volume Manager, or LVM, is supported in RHEL 5620 SAM system deployments that have sufficient disk space for the required volumes.	<i>5620 SAM Planning Guide</i> <i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i>	Section “Logical disk management” in the <i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i>
SAM-38006	Windows 8 client support	You can install a 5620 SAM single-user client on a PC that runs Windows 8, Enterprise or Windows 8 Professional.	<i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i>	Section “5620 SAM deployment on Windows overview”

5620 SAM wireless OSS enhancements

The following table lists 5620 SAM wireless OSS enhancement features for this release of the 5620 SAM.

Table 4-3 5620 SAM wireless OSS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-39028	5620 SAM management of workorder priority	You can use the 5620 SAM-O to specify activation session priority at session creation.	<i>5620 SAM Wireless OSS Interface Developer Guide</i>	Activation session priority

5620 SAM XML OSS enhancements

The following table lists 5620 SAM XML OSS enhancement features for this release of the 5620 SAM.

Table 4-4 5620 SAM XML OSS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-40511	LogToFile support	LogToFile support is now available for OAM-PM Session test results.	<i>5620 SAM XML OS S Interface Developer Guide</i>	Section 12.11

Data center management enhancements

The following table lists data center management enhancement features for this release of the 5620 SAM.

Table 4-5 Data center management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-13356	Multiple data center support	The 5620 SAM supports the management of up to 16 data centers. You can create multiple data center objects in your cloud network.	<i>Nuage Virtualization Guide</i>	Section 8.6 Procedure 8-1
SAM-15478	7850 VSG HA virtual chassis	The 5620 SAM supports the management of a virtual chassis — two 7850 VSG or 7850 VSA NEs operating as a single management entity.	<i>Nuage Virtualization Guide</i>	Section 7.2
SAM-28963	Software gateway support	The 5620 SAM supports software gateways as a standard attachment for virtualized services.	<i>Nuage Virtualization Guide</i>	Section 8.8
SAM-29049	dNAT support	The 5620 SAM exposes the distributed NAT configuration state within the lightweight service. The distributed NAT IP address can be used to troubleshoot and highlight network routes using the 5650 CPAM.	<i>Nuage Virtualization Guide</i>	Section 8.4
SAM-36710	BGP alarm correlation for absent DC events	The 5620 SAM supports correlation for absent V-Port or BGP Prefix events. In cases where a V-Port or BGP Prefix event is expected, but not present, the 5620 SAM raises an alarm.	<i>Nuage Virtualization Guide</i>	Section 11.5
SAM-38073	Fault management correlation framework	The 5620 SAM supports a new fault management framework with correlation rules specific to data center alarms and events.	<i>Nuage Virtualization Guide</i>	Section 11.5
SAM-38915	Historical event correlation — IGP monitoring	The 5620 SAM supports the use of IGP prefix information for correlation purposes. IGP monitors are used to monitor virtual components associated with an IGP route and correlate IGP status to those objects.	<i>Nuage Virtualization Guide</i>	Section 11.6
SAM-38919	V-Site persistency	The 5620 SAM supports persistency for deleted V-Switch Sites on virtualized services.	<i>Nuage Virtualization Guide</i>	Section 8.3 Section 10.4
	Lightweight service tunnel mapping	The 5620 SAM supports the automatic creation of virtual spoke SDPs on EVPN services.	<i>Nuage Virtualization Guide</i>	Section 10.4 Section 10.6
	SDNC service highlight enhancement	The 5620 SAM supports service highlighting from the V-Site.	<i>Nuage Virtualization Guide</i>	Section 10.4
	IGP upstream router monitor for deletions and additions	The 5620 SAM uses information from IGP monitors to correlate events to virtualized service objects when upstream routers are added or removed or when there is a redundancy change.	<i>Nuage Virtualization Guide</i>	Section 11.6

(1 of 2)

Feature ID	Feature or function	Description	Book	See
SAM-38945	Data center applications	The 5620 SAM provides network management and fault monitoring functionality for virtualized services using the following web-based applications: <ul style="list-style-type: none"> Data Center Inventory Data Center Service Navigator 	<i>Nuage Virtualization Guide</i>	Chapter 5
SAM-38994	7850 VSG/VSA and VSC 2.1 support	The 5620 SAM supports the 7850 VSG, 7850 VSA, and standalone VSC, Release 2.1.	<i>Nuage Virtualization Guide</i>	—
SAM-39622	Customer and domain enhancements	The 5620 SAM supports a hierarchical list of services under each customer. This enhancement allows for more navigability of virtualized services from the DC web applications.	<i>Nuage Virtualization Guide</i>	Chapter 5
SAM-47422	SWGW statistics and TCA support	The 5620 SAM supports statistics and TCAs for SGWG port (bridge and host) and SWGW V-Switches (VSG and VRSG).	<i>Nuage Virtualization Guide</i>	Section 8.8
SAM-45488	Release 3.0 VSG L3 dVRS support	The 5620 SAM supports L3 VPLS for Release 3.0 Nuage network elements on V-Ports acting as a VSG gateway.	<i>Nuage Virtualization Guide</i>	Section 8.8

(2 of 2)

Device management enhancements

The following table lists device management enhancement features for this release of the 5620 SAM.

Table 4-6 Device management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28087	SFLOW counterpolling	The 5620 SAM supports configuring sFlow on 7750 SR-12E and 7950 XRS nodes.	<i>5620 SAM User Guide</i>	Procedures 14-16 and 17-1
SAM-28204	SHA-1 and SHA-256 algorithms for TCP key chains.	The 5620 SAM supports configuring TCP key chains that use the HMAC-SHA-1 and HMAC-SHA-256 algorithms, and configuring the Key Option parameter for Password or Message Digest keys with a key direction of Send-Receive.	<i>5620 SAM System Administrator Guide</i>	Section "TCP enhanced authentication procedures"
SAM-34504	56K DS1 channels	The 5620 SAM supports configuring a DS0 channel group with a speed of 56K.	<i>5620 SAM User Guide</i>	Procedure 17-32
SAM-41852	Allowed SSH ciphers	The 5620 SAM supports configuring allowed client and server SSH ciphers for NE system security.	<i>5620 SAM System Administrator Guide</i>	Procedure "To configure device system security settings"
SAM-41880	Hold-time timers for TDM ports	The 5620 SAM supports configuring hold-time timers for TDM ports on 12-port DS3/E3 ASAP MDA and 4-port DS3/E3 CMA cards in 7750 SR, 7710 SR, and 7450 ESS nodes, Release 12.0 R4 or later.	<i>5620 SAM User Guide</i>	Procedure 17-12

4 — New features

GUI enhancements

The following table lists GUI enhancement features for this release of the 5620 SAM.

Table 4-7 GUI enhancements

Feature ID	Feature or function	Description	Book	See
SAM-32211	Accessibility Requirements - keyboard access	Keyboard accessibility is enhanced to include: <ul style="list-style-type: none"> • Shortcut keys for hidden tab display and options • CTRL-C, CTRL-X, and CTRL-V as alternatives to drag and drop 	<i>5620 SAM User Guide</i>	Procedures 4-21 and 4-22
SAM-41020	Custom 5620 SAM LTE [RAN-ePC] workspace and [RAN] workspace enhancement	The 5620 SAM features the following dedicated workspaces for wireless management: <ul style="list-style-type: none"> • Wireless_RAN—includes LTE RAN and small cell menu functions • Wireless_RAN_ePC—includes LTE RAN and ePC menu functions • Wireless_ePC—includes LTE ePC menu functions 	<i>5620 SAM LTEePC User Guide</i>	Section 1.4
SAM-42656	Service and composite service topology icons added to workspace	Composite service and service topology map icons with configurable text fields are included in the 5620 SAM custom workspace topology options.	<i>5620 SAM User Guide</i>	Procedure 5-8
SAM-43438	Save open configuration forms for quick access	The 5620 SAM supports quick access to configuration forms. You can save a set of open configuration forms and re-open them later with one operation.	<i>5620 SAM User Guide</i>	Procedure 4-9
SAM-43438	Workspace enhancements - set default list	5620 SAM custom workspaces allow you to configure the default object type that appears when a list form opens. You can customize defaults for the Manage Equipment, Manage MPLS Objects, and Manage Services list forms.	<i>5620 SAM User Guide</i>	Procedure 5-9
SAM-43438	Workspace enhancements - tab preferences	The 5620 SAM supports tab preferences in workspaces. You can configure a workspace to use local tab preferences that are set using the tab selector, or to use custom tab preferences that are saved in the workspace.	<i>5620 SAM User Guide</i>	Procedure 5-4
SAM-43438	Workspace enhancements - OLC parameter for navigation tree objects	5620 SAM custom workspaces allow you to enable or disable the display of the current OLC state for navigation tree objects below the level of the NE.	<i>5620 SAM User Guide</i>	Procedure 5-7

Network management enhancements

The following table lists network management enhancement features for this release of the 5620 SAM.

Table 4-8 Network management enhancements

Feature ID	Feature or function	Description	Book	See
—	Auxiliary database cluster support	To increase the scale of functions such as statistics collection and to reduce the 5620 SAM database processing load, you can deploy an auxiliary database cluster in a 5620 SAM system on RHEL. When you include an auxiliary database cluster in a 5620 SAM system, you can deploy an additional Preferred statistics-collection auxiliary server, which enables a higher collection rate and allows the 5620 SAM to perform load balancing.	<i>5620 SAM User Guide</i>	<i>5620 SAM Planning Guide</i> “Auxiliary database installation procedures” in the <i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i> “5620 SAM database management” chapter in the <i>5620 SAM System Administrator Guide</i>
SAM-28350	OMCR for ESM	Warm Standby option on MC peer groups enables oversubscribed multi-chassis redundancy.	<i>5620 SAM User Guide</i>	Section 37.1 Procedure 37-1
SAM-28404	Wi-Fi offload: Distributed subscriber management	Distributed subscriber management support. Authenticate on DHCP configuration on VLAN tag range for IES and VPRN group interfaces (Procedures 71-19 and 72-79). ISA RADIUS policy accounting attributes: NAS IP Address, NAS Port, and Class. Authentication attributes: NAS IP Address and NAS Port (Procedure 50-9). Distributed subscriber management configuration on VLAN tag range for IES and VPRN WLAN GW group interfaces (Procedures 71-19 and 72-79). ISA-AA group configuration on ISA-WLAN GW group (Procedure 15-8). New distributed subscriber management traffic policer and distributed subscriber management IP filter policy objects (Procedures 56-24 and 56-25). Prefix Length configuration on HTTP redirect policy (Procedure 56-20). RADIUS proxy user, default RADIUS policy, and WLAN GW group configuration on RADIUS proxy server (Procedure 23-8). LI source WLAN distributed subscriber configuration as mirror source on a mirror service (Procedure 30-21).	<i>5620 SAM User Guide</i>	Section 36.1 Section 56.1 Workflow to configure distributed subscriber management
SAM-28647	LUDB/RADIUS enhancements	New IPv6 Options RADIUS attribute on subscriber authentication policy. Ipv6 lease times configuration and relay to client option configuration on local user database, IpoE and PPP hosts.	<i>5620 SAM User Guide</i>	Procedure 66-5

(1 of 3)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-32220	NE backup storage on main-server file system	The 5620 SAM stores NE configuration backups on the main-server file system rather than in the database. In a redundant deployment, the backup file sets are synchronized between main servers. The NE backups are automatically moved from the database to the file system during the standalone or primary main server initialization after an upgrade. This data migration has serious implications that you must consider when you plan a system upgrade or platform migration.	<i>5620 SAM Planning Guide</i> <i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i>	Section “Special upgrade requirements” in the <i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i>
SAM-33449	LAGs containing mixed 10G and 100G ports	The 5620 SAM supports configuring LAG groups that contain a mix of 10G and 100G ports.	<i>5620 SAM User Guide</i>	Procedure 15-10
SAM-37429	Dual OpenFlow controller support	An OpenFlow switch can have two controllers, for example, two separate 5620 SAM systems.	<i>5620 SAM User Guide</i>	Section 25.1
SAM-37431	Multiple OpenFlow switch support	You can configure up to eight OpenFlow switches on one NE.	<i>5620 SAM User Guide</i>	Section 25.1
SAM-37944	LAG weighted per-link hashing	Weighted per-link hashing configuration on LAG objects, with auto-balancing option and manual re-balance command. LAG weighted per-link hashing configuration on subscriber profile. Weighted per-link hashing configuration on the following service objects: <ul style="list-style-type: none"> • Epipe and Ipipe L2 access interface (procedure 68-20) • IES L3 access interface (Procedure 71-24) • IES group interface SAP (Procedure 71-18) • VPLS L2 access interface (B-VPLS, I-VPLS and M-VPLS)(Procedure 69-26) • VPRN L3 access interface (Procedure 72-30) • VPRN group interface SAP (Procedure 72-78) 	<i>5620 SAM User Guide</i>	Sections 15.10 and 15.12 Procedures 15-10, 15-11, 15-12, and 56-2
SAM-38379	ISA NAT group traps	Operationally Down Upon Group Degrade configuration on IES and VPRN soft GRE group interface - WLAN gateway. Specifies that soft GRE group interface is down when WLAN GW ISA group is degraded.	<i>5620 SAM User Guide</i>	Procedures 71-19 and 72-79
SAM-39601	DTS 175061: DHCPv6 Advertise message	DHCPv6 Advertise message format global configuration on NE.	<i>5620 SAM User Guide</i>	Procedure 14-15

(2 of 3)

Feature ID	Feature or function	Description	Book	See
SAM-40514	OpenFlow information retrieval and display	When an OpenFlow switch and the associated management channel are operational, the switch properties form displays the following information: <ul style="list-style-type: none"> • host device type and software release • OpenFlow operating parameters • OpenFlow forwarding statistics 	<i>5620 SAM User Guide</i>	Section 25.1
SAM-41968	GNE performance statistics and inventory retrieval via device-specific plug-in	You can install a device-specific plug-in that enables the retrieval of non-standard MIB objects from a GNE.	<i>5620 SAM User Guide</i>	Section 10.2
SAM-42944	Sticky hash-buckets	The 5620 SAM now supports an ECMP route management feature called sticky ECMP, on routers that support this capability. The relevant parameters is named Sticky ECMP.	<i>5620 SAM User Guide</i>	Procedure 23-15 and the <i>5620 SAM Parameter Guide</i>
SAM-43462	DHCP server multi-homing enhancements	Failover support on IP address pools on local DHCP and DHCPv6 servers. Configuration supported on base routing instances and VPRN routing instances.	<i>5620 SAM User Guide</i>	Section 66.1 Procedures 23-2 and 23-3
SAM-43817	Multicast redirect enhancements	Multicast redirect interface designated forwarder and per-host replication using multicast destination address. Redundant Multicast configuration for IGMP interface on base routing instance and VPRN routing instance.	<i>5620 SAM User Guide</i>	IGMP Procedures 24-51, 71-6, and 72-66
SAM-43823	Out-of-band OpenFlow switch management	The 5620 SAM can manage an OpenFlow switch using an in-band or out-of-band management channel.	<i>5620 SAM User Guide</i>	—

(3 of 3)

OAM and service testing enhancements

The following table lists OAM and service testing enhancement features for this release of the 5620 SAM.

Table 4-9 OAM and service testing enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28146 SAM-42727 SAM-42728 SAM-42935	Y.1731 loss measurements	The 5620 SAM now supports running a CFM Loss Measurement, single-ended test. This test determines losses on a P2P Ethernet Virtual Circuit. It utilizes the PM Session testing framework. Test Suite support is provided.	<i>5620 SAM User Guide</i>	Procedures 80-1, 83-3, 83-6, 83-8, and 83-9

(1 of 2)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28148 SAM-42751 SAM-42782 SAM-42789 SAM-42939	IP-based SLA monitoring solution (TWAMP-LIGHT)	The 5620 SAM now supports running a TWAMP Light test for IP-level monitoring. TWAMP provides an option to monitor IP SLA performance as it relates to Key Performance Indicators. This test utilizes the PM Session testing framework. Test Suite support is provided.	<i>5620 SAM User Guide</i>	Procedures 83-2, 83-3, 83-7, 83-8, 83-9, 80-1, 23-1 and 72-84
SAM-40284	DCR 603246: Add option to stop test execution for SAA OAM tests	The 5620 SAM now allows you to stop the execution of a running OAM test by adding a Stop Execution button on the test forms.	<i>5620 SAM User Guide</i>	Section 81.4 Procedure 83-3
SAM-40369	DCR 679800: STM retention time adjustment	The 5620 SAM will now automatically try to optimize the configured DB test result retention time upwards or downwards to ensure that the number of stored results does not exceed a base of 20 000 000. The relevant parameter is DB Test Result Retention Time (hours).	<i>5620 SAM Parameter Guide</i>	—
SAM-40499	Role Based IP Interfaces	This feature extends role-based test generation options to the IP Interface. Options are: Test Source, Test Target, and Role (Hub/Spoke). This is available for VPRN, VPLS, and VLL sites.	<i>5620 SAM User Guide</i>	Procedures 23-1, 68-2, 68-3, 69-68, 69-73, 69-74, 69-78, and 72-5
SAM-42388	Auto creation of MEG, MEPs for G8031 Ethernet Tunnel	The 5620 SAM now supports automatic creation of the MEG and MEP on both ends of an Ethernet tunnel. Applies to both primary and secondary tunnels.	<i>5620 SAM User Guide</i>	Procedure 29-6

(2 of 2)

Protocol enhancements

The following table lists protocol enhancement features for this release of the 5620 SAM.

Table 4-10 Protocol enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28198	BGP SIDR prefix origin validation	To help prevent BGP prefix spoofing, you can configure validation of the AS values that are received from EBGP peers. When a BGP speaker that supports the validation function receives a route AS value, the speaker can check the associated prefix for validity. If the origin AS is not correct for the advertised prefix, the route is considered invalid and treated according to the routing policy configuration. The function is supported on 7450 ESS, 7710 SR, 7750 SR, and 7950 XRS base and VPN routing instances.	<i>5620 SAM User Guide</i>	Section 24.1 Procedure 24-6
SAM-28170	RIPng support	The 5620 SAM supports configuring RIPng groups and interfaces on supported nodes.	<i>5620 SAM User Guide</i>	Section 24.4

(1 of 2)

Feature ID	Feature or function	Description	Book	See
SAM-28172	TCP keychains on RSVP interfaces	The 5620 SAM supports configuring TCP keychains on RSVP interfaces.	<i>5620 SAM User Guide</i>	Procedure 24-35
SAM-28649	WPP dual homing support	Track SRRP Instance configuration for network interface on base routing instance, and L3 access interface on IES and VPRN service. Specifies master NE to which WPP traffic is directed in SRRP dual homing configurations.	<i>5620 SAM User Guide</i>	WPP Procedures 23-9, 23-10, 71-21, 71-40, 72-45, and 72-82
SAM-28849	ISIS LSP refresh time	You can configure the ISIS LSP refresh interval on an ISIS site.	<i>5620 SAM User Guide</i>	Procedures 24-22, 69-69, and 72-61
SAM-37055	Unicast RIP advertisement	The 5620 SAM supports configuring unicast RIP advertisement on RIP and RIPv6 interfaces in network interfaces, IES services, and VPRN services.	<i>5620 SAM User Guide</i>	Procedure 24-13
SAM-40674	L2TP enhancements	Removal of automatic resync for L2TP tunnel instance endpoints after changes to tunnel group profile or tunnel profile. Tunnel instance endpoint resync is performed manually on L2TP site.	<i>5620 SAM User Guide</i>	Section 24.1 Procedures 24-36 and 24-38
SAM-41844	Prune old Type7 routes on source failure for inter site shared NG-MVPN	The 5620 SAM supports configuring the Persistent Type 5 Advertisement and Kat Type 5 Advertisement Withdraw parameters on PIM sites in VPRN services.	<i>5620 SAM User Guide</i>	Procedure 24-44
SAM-41892	FEC Limit per LDP Peer	You can specify a limit on the number of LDP FECs that an LSR accepts from a peer and adds to the LDP label database.	<i>5620 SAM User Guide</i>	Procedures 24-17
SAM-45248 SAM-45249	Policy-Test Utility	A new test utility is introduced to verify BGP route attributes. A specified routing policy is checked against local definitions on a user-specified NE. Routes found are evaluated against the routing policy statement and are accepted or rejected. The test can provide a first-level validation before applying the policy on the BGP.	<i>5620 SAM User Guide</i>	Procedure 24-9

(2 of 2)

Policy enhancements

The following table lists policy enhancement features for this release of the 5620 SAM.

Table 4-11 Policy enhancements

Feature ID	Feature or function	Description	Book	See
SAM-688	DCR 540746: Enh. of diagrams (relations aingr, scheduler)	Relations tab (access ingress context) was removed in 7210 SAS and 1830 PSS access ingress policy configuration. Graphical Schedulers tab was removed in Scheduler policy configuration.	<i>5620 SAM User Guide</i>	Procedures 44-2 and 44-15

(1 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28149	BFD support over VCCV	The 5620 SAM supports associating BFD template policies with PW Template Bindings on sites in VPLS and Epipe services.	<i>5620 SAM User Guide</i>	Procedures 28-3 and 69-61
SAM-28160	Accounting template policies	<p>The 5620 SAM supports creating accounting template policies for use with policy accounting. When an accounting template policy is associated with an interface, ingress statistics are collected for received packets and bytes that are sourced from or destined for routes marked with the class indexes contained in the policy.</p> <p>An accounting template policy can be associated with the following interfaces on base routers, IES services, and VPRN services:</p> <ul style="list-style-type: none"> • network interfaces • L3 access interfaces • tunnel interfaces • subscriber group interfaces 	<i>5620 SAM User Guide</i>	Procedure 23-22 Procedures 23-10, 71-34, and 72-38
	Source and destination class indexes	The 5620 SAM supports associating routing policy statements and static routes with source and destination class indexes.	<i>5620 SAM User Guide</i>	Procedures 23-13 and 23-15
	Stats pool limit	The 5620 SAM supports enabling policy accounting on a forwarding plane and configuring the maximum size of the statistics pool using the Stats Pool Limit parameter.	<i>5620 SAM User Guide</i>	Chapter 16
SAM-28202	Authentication keychain support for OSPF and ISIS	The 5620 SAM supports configuring an authentication keychain for OSPF instances, virtual links, and sham links; and ISIS sites and interfaces.	<i>5620 SAM User Guide</i>	Procedures 24-25, 24-29, 24-31 and 72-83
SAM-28370	Python cache	<p>The python policy is configurable with a cache which stores script message strings for access by external scripts. Local definitions of python policy are configurable with a cache peer, which specifies an MC synchronization peer.</p> <p>Python cache file location configuration on NE (Procedure 14-27).</p>	<i>5620 SAM User Guide</i>	Section 51.1 Procedures 51-1 and 51-2
SAM-28848	RFE 148922: Egress re-classification based on ingress soft profile	The 5620 SAM supports configuring whether or not the profile of an egress packet changes from ingress to egress. A soft profile can change, based on the egress CIR state, but a hard profile does not change from ingress to egress.	<i>5620 SAM User Guide</i>	Procedure 44-3
SAM-36468	Python-RADIUS enhancements - python policy	Python policy configuration on diameter peer policy. Diameter options on python policy message entries.	<i>5620 SAM User Guide</i>	Section 50.1 Procedure 50-10
SAM-36633	Egress port scheduler LAG distribution	This feature provides the ability to set CIR and PIR level rate types to kbps, percentage of local, and percentage of active LAG on a QoS port scheduler policy. It also applies to the associated overrides on an Ethernet port.	<i>5620 SAM User Guide</i>	Procedures 44-18 and 17-1

(2 of 4)

Feature ID	Feature or function	Description	Book	See
SAM-37054	DTS 166644: VPLS action forward SAP support for IPv6	This enhancement introduces ACL IPv6 filter policy support for a PBR redirect action forward to a SAP or SDP for VPLS services.	<i>5620 SAM User Guide</i>	Procedures 45-3 and 69-25
SAM-37527	Modify the Origin in Global Policy	The Origin field of a global policy is renamed to Last Sync and now displays the NE that caused the last sync between global and local policies. A new field called Last Sync Time is also added, and shows the last time that the global policy was synchronized with the local policy.	<i>5620 SAM User Guide</i>	Section 43.1
SAM-37750	RFE 171519: Prefix-list option for source-address match in route policies	The 5620 SAM supports configuring a routing statement to accept a prefix list instead of a single IP address for the source address.	<i>5620 SAM User Guide</i>	Procedure 23-15
SAM-38162	RFE 172653: TMS Arbor ingress filtering	This feature allows configuration of a filter applied to the TMS-ISA ingress TMS offramp interface. This allows TMS-generated traffic to be redirected to the base routing table.	<i>5620 SAM User Guide</i>	Procedures 71-20 and 72-81
SAM-39613	Relay unsolicited IPSec configuration messages	The 5620 SAM supports configuring an IPSec IKEv2 tunnel to send specified unsolicited configuration attributes.	<i>5620 SAM User Guide</i>	Procedure 31-1
SAM-39677	DTS 175095: MSAP policy enhancement	Ingress Queuing Type configuration on MSAP policy, VPLS Only and IES/VP RN Only configuration.	<i>5620 SAM User Guide</i>	Procedure 56-8
SAM-39679	DTS 167797: RADIUS server policy IPv6	IPv6 source address configuration on AAA RADIUS server policy.	<i>5620 SAM User Guide</i>	Procedure 50-4
SAM-39985	CPU Protection: log events for out-profile-rate, additional protocols for ip-src-monitoring (Phase 2 with the full protocol set)	This feature adds the GTP, ICMP, and IGMP protocols to SR CPU protection for the SRC monitoring of the source IP.	<i>5620 SAM System Administrator Guide</i>	—
SAM-41723	Enhancement to 5620 SAM Community in Policy Statement	Configuration enhancements and modifications were made to the Community configuration in the 5620 SAM routing statement policy.	<i>5620 SAM User Guide</i>	Procedure 23-15
SAM-41870	Auto-detect EAP authentication	The 5620 SAM supports configuring an IPSec-GW to use both EAP and another authentication method. The authentication parameters appear on the IKE policy configuration form.	<i>5620 SAM User Guide</i>	Procedure 31-1
SAM-41886	RFE 174786: DNS information via S2a interface	Protocol Configuration Options configuration on mobile gateway profile allows transfer of DNS information from the PGW.	<i>5620 SAM User Guide</i>	Procedure 56-16

(3 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-43819	Selective multicast redirect	Multicast redirection interface configuration on local definitions of global routing policy statements allows selective redirection of specific IGMP join requests.	<i>5620 SAM User Guide</i>	Routing policies Procedure 23-16
SAM-43826	Support conditional action in IPv4 ACL filters	This feature introduces support for an IPv4 ingress filter policy drop action conditioned with packet length criterion	<i>5620 SAM User Guide</i>	Procedure 45-2
SAM-46531	Enhancement of Policy Distribution Mode	The 5620 SAM policy distribution framework has been enhanced to show all relevant local policies and additional pertinent information for each policy. A local policy's current distribution mode and related global policy are now displayed.	<i>5620 SAM User Guide</i>	Procedure 43-1
SAM-49718	DCR 695867: Rename Policy button "Cancel" to "Close"	The Cancel button in the policy distribution framework has been renamed to Close. Affected operations include switching modes, distribution, and synchronization.	<i>5620 SAM User Guide</i>	Procedures 43-1, 43-5, and 43-8

(4 of 4)

Service management enhancements

The following table lists service management enhancement features for this release of the 5620 SAM.

Table 4-12 Service management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-12984	MLD snooping for PBB I-VPLS	The 5620 SAM supports configuring MLD snooping on I-VPLS sites, SAPs, and spoke SDPs.	<i>5620 SAM User Guide</i>	Procedures 69-73 and 69-78
SAM-23360	Suppress services alarms when SAP/port is down	When a SAP is administratively down, the 5620 SAM raises only the AccessInterfaceDown alarm. Any other alarms, which are raised as a consequence of the AccessInterfaceDown alarm, are suppressed.	<i>5620 SAM User Guide</i>	—
SAM-27975	E-Tree support	The 5620 SAM supports enabling E-Tree support on VPLS sites, and configuring VPLS L2 access interfaces and SDP bindings as an E-Tree leaf or root.	<i>5620 SAM User Guide</i>	Procedures 69-7, 69-25, and 69-47
SAM-28091	Second ingress cookie on L2TPv3 spoke or mirror SDP binding	The 5620 SAM supports configuring a second ingress cookie on L2TPv3 spoke SDP bindings in VLL Epipe and mirror services.	<i>5620 SAM User Guide</i>	Procedure 68-9
SAM-28149	BFD support over VCCV	You can enable BFD on spoke SDP bindings on VLL, VPLS, IES and VPRN services.	<i>5620 SAM User Guide</i>	Procedures 68-13 to 68-16, 69-55 to 69-58, 71-10 to 71-13, and 72-70 to 72-73

(1 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-28168	Validate static routes using ARP/ND	The 5620 SAM supports validating a static route based on the reachability of the next-hop in the ARP cache using the Validate Next Hop parameter on the static route configuration form.	<i>5620 SAM User Guide</i>	Procedure 23-13
SAM-28193	Ignore default uRPF routes	The 5620 SAM supports configuring L3 access interfaces on VPRN, IES, and base routing instances to ignore default routes when performing a uRPF route lookup.	<i>5620 SAM User Guide</i>	Procedure 23-10
SAM-28198	Transit subscriber management enhancement	The 5620 SAM uses an ageout constraint policy, rather than a size constraint policy, to purge inactive transit subscribers from the database.	<i>5620 SAM System Administrator Guide</i>	Procedure “To configure an ageout constraint policy”
SAM-28200	IS-IS router capability advertisement and hello padding	The 5620 SAM supports configuring the Advertise Router Capability and Hello Padding parameters on IS-IS sites.	<i>5620 SAM User Guide</i>	Procedure 24-22
SAM-28216	IPv6 redundant sources on PIM sites	The 5620 SAM supports using IPv6 prefixes for MVPN redundant sources on PIM sites in VPRN services. In addition, the 5620 SAM supports configuring the Persistent Type 5 Advertisement parameter for the same.	<i>5620 SAM User Guide</i>	Procedure 24-44
SAM-28222	GRT Extranet support	The 5620 SAM supports configuring GRT extranet group prefixes on PIM sites in VPRN services.	<i>5620 SAM User Guide</i>	Procedure 24-44
SAM-28226	RPF select group	The 5620 SAM supports configuring RPF select groups on PIM sites in VPRN services.	<i>5620 SAM User Guide</i>	Procedure 24-44
SAM-28260	Disable duplicate address discovery	The 5620 SAM supports disabling duplicate address discovery on IES, VPRN, and network interfaces with IPv6 enabled.	<i>5620 SAM User Guide</i>	Procedures 23-10, 71-23, and 72-28
SAM-28332	EVPN-VXLAN VPLS	The 5620 SAM configuring EVPN VXLAN parameters on sites in VPLS services.	<i>5620 SAM User Guide</i>	Procedure 69-65
SAM-28298	ICMP tunneling over MPLS LSP	The 5620 SAM supports enabling ICMP tunneling on base routing instances and configuring TTL propagation on base routing instances and VPRN sites.	<i>5620 SAM User Guide</i>	Procedure 23-1
SAM-28406	WLAN GW redundancy	WLAN GW redundancy configuration on IES and VPRN subscriber interfaces. Forced switchover to standby management function for WLAN GW on VPRN subscriber interfaces.	<i>5620 SAM User Guide</i>	Procedures 71-14, 72-74, and 72-75
SAM-28424	AA IP prefix list policies	An IP prefix list policy, which contains a list of IP prefixes, enables the use of multiple IP addresses or prefixes as match criteria for an AA session filter, application profile, or AQP.	<i>5620 SAM User Guide</i>	Procedures 78-26, 78-27, 78-1, and 78-2
SAM-28442	DPI for Wi-Fi distributed subscriber management	You can add an ISA-AA group to an ISA-WLAN GW group to perform DPI on distributed subscriber traffic.	<i>5620 SAM User Guide</i>	Procedures 15-2 and 15-8

(2 of 5)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28448	IPv6 over IPv4 for IPsec	The 5620 SAM supports configuring IPv6 over IPv4 for IPsec tunnels. IPv6 link local and IPv6 addresses are supported on tunnel interfaces for IES and VPRN services. IPv6 addresses are supported for local and remote addresses for VPRN IPsec security policies. The 5620 SAM also supports configuring IPv6 static routes for IPsec tunnel interfaces, and configuring MTU values and ICMPv6 generation parameters for IPsec tunnels and tunnel templates.	<i>5620 SAM User Guide</i>	Procedures 31-4, 31-11, and 31-12.
SAM-28454	IPsec on ISA2 MDA	You can include the next-generation ISA2 MDA in an ISA tunnel group. An ISA MDA and an ISA2 MDA can be members of the same ISA tunnel group.	<i>5620 SAM User Guide</i>	—
SAM-29043	Multiple IKEv2 trust anchors and certificates	The 5620 SAM supports configuring multiple trust anchors and certificates on an IPsec gateway or IPsec tunnel using trust anchor profiles and certificate profiles. Each profile is associated with multiple entries, and the profile is in turn configured on an IPsec gateway or tunnel.	<i>5620 SAM User Guide</i>	Procedures 31-9, 31-10, 31-12, and 31-13
SAM-31050	Multi-chassis redundancy for unnumbered hosts on retail subscriber interface	PCCW multi-chassis redundancy support for IPoE and PPPoE wholesale/retail. Export Host Routes configuration on unnumbered VPRN and IES retail subscriber interfaces.	<i>5620 SAM User Guide</i>	Procedures 71-14 and 72-74
SAM-34195	VPRN RT/RD auto-assignment	You can use the 5620 SAM to pre-define a range of route targets and route distinguishers for VPRN services.	<i>5620 SAM User Guide</i>	Procedure 72-86
SAM-37063	IPsec: Set sender in CMPv2 header for IR without extra certifications and HTTP persistent connection	You can enable the Always Set Sender for Initialization Request parameter in the CMPv2 header field for the 7450 ESS and 7750 SR, Release 11.0 R7 and later.	<i>5620 SAM System Administrator Guide</i>	Procedure “To configure a PKI certificate authority profile”
SAM-37067	ISIS BFD-enabled TLV	The 5620 SAM supports configuring BFD-enabled TLV for IS-IS on routing instances.	<i>5620 SAM User Guide</i>	Procedure 24-25
SAM-37741	Send and receive keys for GRE tunnels	The 5620 SAM supports configuring send and receive keys for GRE tunnels in IES and VPRN services on 7750 SR nodes, Release 12.0R1 or later. This feature is not supported on 7750 SR-c4 nodes.	<i>5620 SAM User Guide</i>	Procedure 31-11
SAM-37745	RFE 128543: IPv6 support on IPIPE spoke termination on IES/VPRN	The 5620 SAM supports spoke SDP bindings of the Ipipe VC type that terminate on IPv6-enabled IES and VPRN interfaces.	<i>5620 SAM User Guide</i>	—
SAM-37753	Monitored Group Name for VPLS BGP-AD	The 5620 SAM supports configuring monitored operational groups on PW template bindings in VPLS services.	<i>5620 SAM User Guide</i>	Procedure 69-62

(3 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-37935	Chassis mode restriction in SAP copy/move removed	The 5620 SAM removes a previous restriction on the copying and moving of SAPs. You can copy or move SAPs from an NE in a lower chassis mode to an NE in a higher chassis mode. The 5620 SAM allows you to copy L2 access interface SAPs from one service to another service. The services to and from which you are copying the L2 access interface must be the same type. The service to which you are copying the L2 access interface must be on the same site and the source service.	<i>5620 SAM User Guide</i>	Procedure 17-6
SAM-38167	BGP IPv4 route resolution by BGP label IPv4 route	The 5620 SAM supports configuring BGP sites on base routers to resolve the next-hop of IPv4 routes without a label to an eligible BGP label-route.	<i>5620 SAM User Guide</i>	Procedure 24-2
SAM-38858	LAG hash improvements: TEID hashing for LAG/ECMP	You can configure the Egress IP Load Balancing parameter to specify whether to include source address or destination address, or both, in LAG and ECMP hash on IP interfaces. Additionally, when L4 load balancing is enabled, the Egress IP Load Balancing parameter applies also to the inclusion of the source and destination port in the hash inputs: You can configure the Egress IP Load Balancing parameter: <ul style="list-style-type: none"> • on base network interfaces • on access interfaces of VPRN and IES services • on network interface of VPRN services 	<i>5620 SAM User Guide</i>	Procedures 23-9, 71-23, 72-28, and 72-59
SAM-38860	LAG hash improvements: LSR load balancing—Ethernet Encapsulated IP	You can set the LSR IP Load Balancing parameter to Ethernet Encapsulated IP to allow IPv4- and IPv6-based hashing (unicast or multicast) on an LSR, when the IP traffic is encapsulated in an Ethernet untagged frame: <ul style="list-style-type: none"> • on base network interfaces • on the load balancing configuration of an NE • on network interface of VPRN services 	<i>5620 SAM User Guide</i>	Procedures 14-7, 23-9, and 72-59
SAM-39223	IPsec: support for PFS DH groups 14 and 15 in IKE policy	The 5620 SAM supports Diffie-Hellman groups 14 and 15 for PFS under the 5620 SAM IPsec IKE policy.	<i>5620 SAM User Guide</i>	Procedure 31-1
SAM-39815	VPRN RT reservation	You can use the 5620 SAM to reserve route targets for hub, spoke, and mesh sites for specific VPRN services. The 5620 SAM raises alarms for misconfigurations, violations and conflicts if you configure your system preferences for services to generate route target reservation alarms.	<i>5620 SAM User Guide</i>	Procedure 72-85 <i>5620 SAM System Administrator Guide</i>
SAM-40243	Longer service names	The 5620 SAM supports configuring a service name that is up to 64 characters long.	<i>5620 SAM Parameter Guide</i>	—

(4 of 5)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-40245	Propagate site name to service	The 5620 SAM can be configured to propagate the name and description of a site to a service when a site is added to a service with no sites configured, or a service is discovered that contains only one site. This behavior can be enabled using the Propagate Name and Description of Site to Service system preference parameter.	<i>5620 SAM Parameter Guide</i>	—
SAM-41132	HTTP redirect enhancement	The 5620 SAM supports the configuration of macro keywords for HTTP redirect on a Release 6.0 or later 7750 MG.	<i>5620 SAM User Guide</i>	Procedure 78-23
SAM-41715	Enhancement to Duplicate IP Address alarm on PW redundancy on IES	When there is a PW redundancy with spoke SDP termination on an IES, the 5620 SAM will not raise the DuplicateIPAddress alarm.	<i>5620 SAM User Guide</i>	—
SAM-41966	Number of SAPs on a service site	The 5620 SAM displays the number of SAPs under a service site on site configuration forms and lists of sites in a service.	<i>5620 SAM Parameter Guide</i>	—
SAM-42656	Service and composite service workspace topology icons	The 5620 SAM includes Service and Composite Service workspace topology icons. You can customize the displayed text for composite service and service icons for workspace topology options.	<i>5620 SAM User Guide</i>	Procedure 5-8
SAM-42952	AA HTTP enrichment anti-spoofing enhancements	You can configure anti-spoofing in an AA HTTP enrichment policy using the subscriber ID or a static string as the validation reference.	<i>5620 SAM User Guide</i>	Procedure 78-24

(5 of 5)

1830 PSS enhancements

The following table lists 1830 PSS enhancement features for this release of the 5620 SAM.

Table 4-13 1830 PSS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-24051	Support for two A2P2125 amplifiers in an 1830 PSS-16 shelf Support for 112PDM11, 11QPEN4, and RA2P card configuration in slots 7 to 9	<p>The 5620 SAM supports configuring two A2P2125 amplifier cards in an 1830 PSS-16 shelf. You can configure the card in slots 3 to 8 in the main shelf and 3 to 9 in the extension shelf.</p> <p>The 5620 SAM supports configuring the following cards only in slots 7 to 9 because of thermal restrictions:</p> <ul style="list-style-type: none"> • 112PDM11 • 11QPEN4 • RA2P 	<i>5620 SAM Optical User Guide</i>	<p>Procedure 9-4 for more information about card configuration</p> <p><i>1830 PSS Product Information and Planning Guide</i> for more information about the A2P2125 card</p>

(1 of 4)

Feature ID	Feature or function	Description	Book	See
SAM-27730	Support configuration of trails and services on the 260SCX2 card	The 5620 SAM supports the following for the 260SCX2 card: <ul style="list-style-type: none"> • configuration of OCH, ODU, and OTU trails • configuration of unprotected transport service • configuration of OCHP and OMSP protected trails • configuration of regen services 	<i>5620 SAM Optical User Guide</i>	Chapter 11 for more information about trail configuration Chapter 13 for more information about service configuration
SAM-30258	Support route modification	The 5620 SAM supports route modification in ODU trails involving OCS devices.	<i>5620 SAM Optical User Guide</i>	Procedure 20-11
SAM-35697	Support flex-grid 1x20 WR20-TF card	The 5620 SAM supports configuring 1x20 WSS-based, full-height, double-slot width, WR20-TF card on the 1830 PSS device.	<i>5620 SAM Optical User Guide</i>	Procedure 9-4 for more information about card configuration Section 16.2 for more information about power setting on the ports of the WR20-TF card
SAM-35699	Support PSC1-6 passive splitter combiner shelf	The 5620 SAM supports: <ul style="list-style-type: none"> • configuring the PSC1-6 shelf on the 1830 PSS-32 device • viewing and modifying the attributes of the five SIG ports, SIG (A to E), each port corresponding to the add-drop ports. For example, SIG A corresponds to the add-drop ports A1 to A6. The ports are automatically created and deleted with the card. • viewing and modifying the attributes of the PSC1-6 (A to E) (1 to 6) add-drop ports that are automatically created and deleted with the card 	<i>5620 SAM Optical User Guide</i>	Procedure 9-1 for more information about shelf configuration Procedure 9-11 for more information about port configuration
SAM-36031	Support the 1830 PSS-36 and 1830 PSS-64 devices	The 5620 SAM supports the following on the 1830 PSS-36 and 1830 PSS-64 devices: <ul style="list-style-type: none"> • device discovery • configuring topological links • configuring 1830 PSS-36 and 1830 PSS-64 shelves • configuring I/O and uplink cards • viewing control cards • configuring ports • viewing port groups • configuring NTP servers 	<i>5620 SAM Optical User Guide</i>	Chapters 19 and 18 Section 18.10

(2 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-36033	Support the element management functions on 1830 PSS-36 and 1830 PSS-64 devices	<p>The 5620 SAM supports all of the element management functions on the 1830 PSS-36 and 1830 PSS-64 devices:</p> <ul style="list-style-type: none"> • create, distribute, and assign an ASAP • modify the severity of a user-defined ASAP • configure an OCS ACL IP filter entry • configure a network interface • perform a backup and restore • perform a software upgrade • configure and assign performance management policy • manage OCS TCA profiles • view LAN ports • configure BITS attributes and synchronization 	<i>5620 SAM Optical User Guide</i>	Chapter 17 Procedure 25-5 Sections 18.7, 18.8, 18.9, 19.4, 19.5, 23.1, 23.2, and 27.4
SAM-36035	OCS connection management support	<p>The 5620 SAM supports auto-configuration of the following OTH facilities:</p> <ul style="list-style-type: none"> • OTUK • ODUK • OCH • GBE • OCN • ODUPTF • OMS • OTS • OMSOCH • OMSOCHIF <p>The 5620 SAM supports configuration of the ODUK cross-connects.</p> <p>The 5620 SAM supports configuration of the ODUK protection groups.</p> <p>The 5620 SAM supports substructuring of the ODUK timeslots.</p>	<i>5620 SAM Optical User Guide</i>	Sections 21.1, 21.3, 21.4, 21.5, 21.6, 21.7, 21.8, 21.9, 21.10, and 21.11 Procedure 21-2
SAM-36466	OCS protected and unprotected trails and services	<p>The 5620 SAM supports discovery, creation, and modification of protected and unprotected point-to-point optical transport services for the 1830 PSS-36 and 1830 PSS-64 nodes.</p> <p>The 5620 SAM supports auto-configuration of virtual OCH cross-connections.</p> <p>The 5620 SAM also supports discovery of client trails.</p>	<i>5620 SAM Optical User Guide</i>	Sections 20.1, 20.2, 22.1, 22.2, and 21.12 Procedure 11-13
SAM-37604	112SDX11 new signal rates and pluggable module support	<p>The 5620 SAM supports configuration of the pluggable module C113G4T on the L1 port of the 112SDX11 card.</p> <p>The 5620 SAM supports configuration of the following signal rates on the client ports of the 112SDX11 card:</p> <ul style="list-style-type: none"> • FC400 • OTU2e 	<i>5620 SAM Optical User Guide</i>	Procedure 9-11 for more information about port configuration

(3 of 4)

Feature ID	Feature or function	Description	Book	See
SAM-37715	Optical link between 1830 PSS device and generic NE	The 5620 SAM supports configuration of optical links between an 1830 PSS and a generic NE.	<i>5620 SAM Optical User Guide</i>	Section 18.6
SAM-37179	Support transit VLANs on L2 cards	The 5620 SAM supports configuration of transit VLANs on L2 cards.	<i>5620 SAM Optical User Guide</i>	See the <i>5620 SAM User Guide</i> for more information.
SAM-41355	Support the configuration of the 1AN100G card	The 5620 SAM supports the configuration of the 1AN100G card on the 1830 PSS OCS, version 7.0.1 or higher.	<i>5620 SAM Optical User Guide</i>	Sections 19.3 and 19.4
SAM-41434	Service degrade alarm support	The 5620 SAM supports three new alarms: Transport Service Degrade, Transport Server Failure, and Trail Degrade, which are generated when one of the paths of a protected service or trail fails.	<i>5620 SAM Optical User Guide</i>	<i>5620 SAM Alarm Reference</i> guide for more information about the alarm.
SAM-42561	OMS trail support	The 5620 SAM supports auto-configuration of an OMS trail.	<i>5620 SAM Optical User Guide</i>	Procedure 20-3
SAM-44744	Equipment view improvements	The 5620 SAM equipment management application supports cross-launch of the following functions: <ul style="list-style-type: none"> • properties • optical transport service • raw PM data • power chart 	<i>5620 SAM Optical User Guide</i>	Section 10.7
SAM-45156	View raw PM data	The 5620 SAM supports viewing raw PM data from the equipment view application.	<i>5620 SAM Optical User Guide</i>	Section 23.1
SAM-47448	Broadcast on OCS	The 5620 SAM supports configuring a drop and continue multipoint transport service through an 1830 PSS OCS device that is a partner NE of the 1830 PSS WDM device. The WDM devices are used as the Add, Drop, or Drop and Continue Site of the multipoint transport service.	<i>5620 SAM Optical User Guide</i>	See Procedure 13-2 for more information about configuring a multipoint transport service.
SAM-47723	PM bulk enable on OCS ports	The 5620 SAM supports enabling multiple PMON configurations.	<i>5620 SAM Optical User Guide</i>	Procedure 23-2
SAM-50110	100TH10G card support on OCS	The 5620 SAM supports the configuration of the 100TH10G cards on the OCS devices.	<i>5620 SAM Optical User Guide</i>	Sections 19.3 and 19.4

(4 of 4)

5780 DSC enhancements

The following table lists 5780 DSC enhancement features for this release of the 5620 SAM.

4 — New features

Table 4-14 5780 DSC enhancements

Feature ID	Feature or function	Description	Book	See
—	5780 DSC Release 7.0	The 5620 SAM supports the discovery and management of the 5780 DSC Release 7.0.	<i>5620 SAM LTEePC User Guide</i>	—

7210 SAS enhancements

The following table lists 7210 SAS enhancement features for this release of the 5620 SAM.

Table 4-15 7210 SAS enhancements

Feature ID	Feature or function	Description	Book	See
7210 SAS-D enhancements				
SAM-40083	Support for L2PT Translation for CDP/VTP packets	The 5620 SAM supports L2PT termination for VPLS sites on the 7210 SAS-D, Release 6.0 R6 or later. Support includes L2 access interfaces on VPLS and MVPLS sites.	<i>5620 SAM User Guide</i>	Procedure 69-30
SAM-40087	802.1ag MA naming for Y.1731 ETH-OAM MEG	The 5620 SAM supports all 802.1ag name formats for Y.1731 ETH CFM MEGs configured on the 7210 SAS-D, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40263	CRC Ethernet monitoring	The 5620 SAM supports the configuration of CRC alarm thresholds for Ethernet ports on the 7210 SAS-D, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 17-1
SAM-40265	DEI classification and marking	The 5620 SAM supports DEI classification and color-aware meter configuration for QoS policies on the 7210 SAS-D, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, and 17-1
SAM-40279	MAF criteria enhancement - support source TCP/UDP port	The 5620 SAM supports IPv4 and IPv6 addresses for source ports during MAF match entry configuration on the 7210 SAS-D, Release 7.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To configure a site management access filter policy for a managed device"
SAM-40281	Bidirectional MIPs for Epipe	The 5620 SAM supports the configuration of bidirectional MIPs on Epipe SAPs for the 7210 SAS-D, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 68-28
7210 SAS-E enhancements				
SAM-32597	1830 VWM enhancements	The 5620 SAM supports card slot configuration for an 1830 VWM add-on module connected to the 7210 SAS-E, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2
SAM-32597	1830 VWM enhancements	The 5620 SAM supports the configuration of the VWM wavelength type (CWDM or DWDM) for 1830 VWM devices attached to the 7210 SAS-E, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2

(1 of 8)

Feature ID	Feature or function	Description	Book	See
SAM-40087	802.1ag MA naming for Y.1731 ETH-OAM MEG	The 5620 SAM supports all 802.1ag name formats for Y.1731 ETH CFM MEGs configured on the 7210 SAS-E, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40279	MAF criteria enhancement - support source TCP/UDP port	The 5620 SAM supports IPv4 and IPv6 addresses for source ports during MAF match entry configuration on the 7210 SAS-E, Release 7.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To configure a site management access filter policy for a managed device"
7210 SAS-M enhancements				
SAM-32597	1830 VWM enhancements	The 5620 SAM supports card slot configuration for an 1830 VWM add-on module connected to the 7210 SAS-M, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2
SAM-32597	1830 VWM enhancements	The 5620 SAM supports the configuration of the VWM wavelength type (CWDM or DWDM) for 1830 VWM devices attached to the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2
SAM-36236	Buffer management in the 7210 SAS-M	By default, queue buffer resources for the 7210 SAS-M are allocated equally to all ports. Buffer management allows you to manually decommission unused ports and assign their resources to other ports on the device. The 5620 SAM supports buffer management on the 7210 SAS-M, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 14-25
SAM-40083	Support for L2PT Translation for CDP/VTP packets	The 5620 SAM supports L2PT termination for VPLS sites on the 7210 SAS-M, Release 6.0 R6 or later. For the 7210 SAS-M in access-uplink mode, support includes L2 access interfaces on VPLS and MVPLS sites. For the 7210 SAS-M in network mode, support includes: <ul style="list-style-type: none"> L2 access interfaces on VPLS, MVPLS, and B-VPLS sites Spoke SDPs on VPLS and MVPLS sites 	<i>5620 SAM User Guide</i>	Procedures 69-30 and 69-50
SAM-40087	802.1ag MA naming for Y.1731 ETH-OAM MEG	The 5620 SAM supports all 802.1ag name formats for Y.1731 ETH CFM MEGs configured on the 7210 SAS-M, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40253	PIM-SM in base instance with IGMPv3	The 5620 SAM supports the configuration of IGMP and PIM for base routing instances on the 7210 SAS-M (in network mode), Release 7.0 R1 or later. PIM is supported with IGMPv3.	<i>5620 SAM User Guide</i>	Procedures 24-43 and 24-51
SAM-40255	BGP 3107 labeled routes for L3 VPNs	The 5620 SAM supports RFC 3107 optimization for BGP on the 7210 SAS-M (in network mode), Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 24-5
SAM-40257	MC LAG without LACP	The 5620 SAM supports the configuration of MC LAGs without LACP signaling on the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, 40-1, and 40-2

(2 of 8)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-40259	R-VPLS with IES (no SDPs)	The 5620 SAM supports the configuration of an R-VPLS binding to an IES for VPLS sites on the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	“Routed VPLS” in Section 69.1 Procedure 69-7
SAM-40261	Mixed-mode LSP	The 5620 SAM supports the configuration of mixed-mode LSPs for MPLS service tunnels connected to the 7210 SAS-M (in network mode), Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 29-1
SAM-40263	CRC Ethernet monitoring	The 5620 SAM supports the configuration of CRC alarm thresholds for Ethernet ports on the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 17-1
SAM-40265	DEI classification and marking	The 5620 SAM supports DEI classification and color-aware meter configuration for QoS policies on the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, and 17-1
SAM-40279	MAF criteria enhancement - support source TCP/UDP port	The 5620 SAM supports IPv4 and IPv6 addresses for source ports during MAF match entry configuration on the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure “To configure a site management access filter policy for a managed device”
SAM-40281	Bidirectional MIPs for Epipe	The 5620 SAM supports the configuration of bidirectional MIPs on Epipe SAPs for the 7210 SAS-M (in access-uplink mode), Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 68-28
SAM-45064	Egress remarking on network policy	When you configure a 7210 and 1830 network policy of port type, you can specify the type of egress remarking bits: dot1p, DSCP, or both. The remarking type configuration is supported on local definitions of the policy on the 7210 SAS-M (in network mode), Release 6.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 44-7
SAM-47273	BGP AD support for VPLS	The 5620 SAM supports BGP AD for VPLS on the 7210 SAS-M (in network mode), Release 5.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 69-61
SAM-49683	Virtual port as no-service port in 7210 SAS NES	The 5620 SAM supports the configuration of virtual ports to perform the role of no-service ports (MAC swap, mirror, or test-head ports) on the 7210 SAS-M, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 14-20 and 70-16 Section 80.6
7210 SAS-R enhancements				
—	Aggregate rate limit on the 7210 SAS-R	The 5620 SAM supports ingress aggregate rate limits (H-metering) for L3 access interfaces in IES and VPRN services on the 7210 SAS-R, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 71-29 and 72-34
—	Relay Plain BOOTP on the 7210 SAS-R	The 5620 SAM supports relay plain BOOTP for DHCP configuration in IES and VPRN services on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 71-47 and 72-52
SAM-40035	Support for BITS on the 7210 SAS-R	The 5620 SAM supports the configuration of Building Integrated Timing Supply (BITS) as a timing synchronization reference for the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 16-7

(3 of 8)

Feature ID	Feature or function	Description	Book	See
SAM-40087	802.1ag MA naming for Y.1731 ETH-OAM MEG	The 5620 SAM supports all 802.1ag name formats for Y.1731 ETH CFM MEGs configured on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40089	Up MEPs for 7210 SAS-R	The 5620 SAM supports Up MEPs for Ethernet CFM on VLL Epipe services on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40091	IGMP snooping in the 7210 SAS-R	The 5620 SAM supports IGMP snooping configuration on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	"IGMP snooping" in chapter 69 Procedures 69-35 and 69-52
SAM-40103	Ethernet ring G.8032 support	The 5620 SAM supports G.8032 Ethernet ring protection on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 29-9
SAM-40108	VRRP on 7210 SAS-R	The 5620 SAM supports VRRP for IES and VPRN services on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 71-49 and 72-53
SAM-40110	ECMP in 7210 SAS-R	5620 SAM support for ECMP routing is extended to the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 23-1
SAM-40112	BFD in 7210 SAS-R	5620 SAM support for BFD is extended to the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 23-9 and 23-10
SAM-40253	PIM-SM in base instance with IGMPv3	The 5620 SAM supports the configuration of IGMP and PIM for base routing instances on the 7210 SAS-R, Release 7.0 R1 or later. PIM is supported with IGMPv3.	<i>5620 SAM User Guide</i>	Procedures 24-43 and 24-51
SAM-40257	MC LAG without LACP	The 5620 SAM supports the configuration of MC LAGs without LACP signaling on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, 40-1, and 40-2
SAM-40259	R-VPLS with IES (no SDPs)	The 5620 SAM supports the configuration of an R-VPLS binding to an IES for VPLS sites on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	"Routed VPLS" in Section 69.1 Procedure 69-7
SAM-40261	Mixed-mode LSP	The 5620 SAM supports the configuration of mixed-mode LSPs for MPLS service tunnels connected to the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 29-1
SAM-40263	CRC Ethernet monitoring	The 5620 SAM supports the configuration of CRC alarm thresholds for Ethernet ports on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 17-1
SAM-40265	DEI classification and marking	The 5620 SAM supports DEI classification and color-aware meter configuration for QoS policies on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, and 17-1
SAM-40267	S-PE support for Epipe service using MPLS - static MS-PW	The 5620 SAM supports the configuration of VLL switching sites using MPLS with a static PW on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 68-12
SAM-40269	S-PE support for Epipe service using MPLS-TP static MS-PW	The 5620 SAM supports the configuration of VLL switching sites using MPLS-TP with a static PW on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 68-12

(4 of 8)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-40275	OSPF as PE-CE protocol	The 5620 SAM supports OSPFv2 configuration for VPRN routing instances on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 72-61
SAM-40279	MAF criteria enhancement - support source TCP/UDP port	The 5620 SAM supports IPv4 and IPv6 addresses for source ports during MAF match entry configuration on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To configure a site management access filter policy for a managed device"
SAM-40285	Support for second-generation CPM cards in 7210 SAS-R	The 5620 SAM supports 120G Extended Performance CPM/Switch Fabric cards on the 7210 SAS-R, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	—
SAM-40289	BGP 3107 optimization for the 7210 SAS-R	The 5620 SAM supports RFC 3107 optimization for BGP on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 24-5
SAM-40291	MPLS-TP support for unnumbered interfaces in the 7210 SAS-R	The 5620 SAM supports the configuration of unnumbered interfaces on MPLS-TP routing instances for the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 23-9
SAM-40293	Support for L2PT Translation for CDP/VTP packets in the 7210 SAS-R	The 5620 SAM supports L2PT termination for VPLS sites on the 7210 SAS-R, Release 6.1 R3 or later. Support includes L2 access interfaces and spoke SDPs on VPLS and MVPLS sites.	<i>5620 SAM User Guide</i>	Procedures 69-30 and 69-50
SAM-43660	DHCP Relay on the 7210 SAS-R	The 5620 SAM supports IPv4 DHCP relay configuration for VPLS, IES, and VPRN interfaces on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 69-37, 71-47, and 72-52
SAM-47191	7210 SAS-R enhancements (unnumbered interface support)	The 5620 SAM supports the configuration of unnumbered network interfaces on the 7210 SAS-R, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 23-9 and 23-10
SAM-47191	7210 SAS-R enhancements (3-plus-tag service support)	The 5620 SAM supports the configuration of 3-plus-tag Epipe services on the 7210 SAS-R, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Section 68.1
SAM-47273	BGP and BGP AD support for VPLS	The 5620 SAM supports BGP and BGP AD for VPLS on the 7210 SAS-R, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 69-61
SAM-49683	Virtual port as no-service port in 7210 SAS NEs	The 5620 SAM supports the configuration of virtual ports to perform the role of no-service ports (MAC swap, mirror, or test-head ports) on the 7210 SAS-R, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 14-20 and 70-16 Section 80.6
7210 SAS-T enhancements				
SAM-32597	1830 VWM enhancements	The 5620 SAM supports shelf and card slot configuration for 1830 VWM add-on modules connected to the 7210 SAS-T, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2
SAM-32597	1830 VWM enhancements	The 5620 SAM supports the configuration of the VWM wavelength type for 1830 VWM devices attached to the 7210 SAS-T, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2

(5 of 8)

Feature ID	Feature or function	Description	Book	See
SAM-40029	MPLS support for 7210 SAS-T (IPv4 only)	The 5620 SAM supports network mode for the 7210 SAS-T, Release 7.0 R1 or later. Network mode enables MPLS network transport. Support is similar to that for the 7210 SAS-M (in network mode). IPv6 is not supported.	<i>5620 SAM User Guide</i>	Section 9.5
SAM-40083	Support for L2PT Translation for CDP/VTP packets	The 5620 SAM supports L2PT termination for VPLS sites on the 7210 SAS-T, Release 6.0 R6 or later. For the 7210 SAS-T in access-uplink mode, support includes L2 access interfaces on VPLS and MVPLS sites. For the 7210 SAS-T in network mode, support includes: <ul style="list-style-type: none"> L2 access interfaces on VPLS, MVPLS, and B-VPLS sites Spoke SDPs on VPLS and MVPLS sites 	<i>5620 SAM User Guide</i>	Procedures 69-30 and 69-50
SAM-40085	Buffer enhancements for the 7210 SAS-T	By default, queue buffer resources for the 7210 SAS-T are allocated equally to all ports. Buffer management allows you to manually decommission unused ports and assign their resources to other ports on the device. The 5620 SAM supports buffer management on the 7210 SAS-T, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 14-25
SAM-40087	802.1ag MA naming for Y.1731 ETH-OAM MEG	The 5620 SAM supports all 802.1ag name formats for Y.1731 ETH CFM MEGs configured on the 7210 SAS-T, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40255	BGP 3107 labeled routes for L3 VPNs	The 5620 SAM supports RFC 3107 optimization for BGP on the 7210 SAS-T (in network mode), Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 24-5
SAM-40263	CRC Ethernet monitoring	The 5620 SAM supports the configuration of CRC alarm thresholds for Ethernet ports on the 7210 SAS-T, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 17-1
SAM-40265	DEI classification and marking	The 5620 SAM supports DEI classification and color-aware meter configuration for QoS policies on the 7210 SAS-T, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, and 17-1
SAM-40279	MAF criteria enhancement - support source TCP/UDP port	The 5620 SAM supports IPv4 and IPv6 addresses for source ports during MAF match entry configuration on the 7210 SAS-T, Release 7.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To configure a site management access filter policy for a managed device"
SAM-40281	Bidirectional MIPs for Epipe	The 5620 SAM supports the configuration of bidirectional MIPs on Epipe SAPs for the 7210 SAS-T (in access-uplink mode), Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 68-28
SAM-40948	1588v2 support in 7210 SAS-T	The 5620 SAM supports the following two PTP profile standards for the 7210 SAS-T and 7210 SAS-T ETR, Release 6.0 R6 or later: <ul style="list-style-type: none"> IEEE1588-2008 ITU-T G.8265.1 	<i>5620 SAM User Guide</i>	Procedure 16-17

(6 of 8)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-49683	Virtual port as no-service port in 7210 SAS NEs	The 5620 SAM supports the configuration of virtual ports to perform the role of no-service ports (MAC swap, mirror, or test-head ports) on the 7210 SAS-T, Release 7.0 R1.	<i>5620 SAM User Guide</i>	Procedures 14-20 and 70-16 Section 80.6
7210 SAS-X enhancements				
—	Aggregate rate limit on the 7210 SAS-X	The 5620 SAM supports ingress aggregate rate limits (H-metering) for L3 access interfaces in IES and VPRN services on the 7210 SAS-X, Release 5.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 71-29 and 72-34
—	Relay Plain BOOTP on the 7210 SAS-X	The 5620 SAM supports relay plain BOOTP for DHCP configuration in IES and VPRN services on the 7210 SAS-X, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 71-47 and 72-52
SAM-32597	1830 VWM enhancements	The 5620 SAM supports card slot configuration for an 1830 VWM add-on module connected to the 7210 SAS-X, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2
SAM-32597	1830 VWM enhancements	The 5620 SAM supports the configuration of the VWM wavelength type (CWDM or DWDM) for 1830 VWM devices attached to the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 16-2
SAM-40021	Y.1564 Test-head support for 7210 SAS-X	The 5620 SAM supports Y.1564 tests on VPLS and VLL Epipe services on the 7210 SAS-X, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Section 80.6
SAM-40079	Up MEPs for 7210 SAS-X	The 5620 SAM supports Up MEPs for Ethernet CFM on VPLS and VLL Epipe services on the 7210 SAS-X, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40087	802.1ag MA naming for Y.1731 ETH-OAM MEG	The 5620 SAM supports all 802.1ag name formats for Y.1731 ETH CFM MEGs configured on the 7210 SAS-X, Release 6.0 R6 or later.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-40253	PIM-SM in base instance with IGMPv3	The 5620 SAM supports the configuration of IGMP and PIM for base routing instances on the 7210 SAS-X, Release 7.0 R1 or later. PIM is supported with IGMPv3.	<i>5620 SAM User Guide</i>	Procedures 24-43 and 24-51
SAM-40255	BGP 3107 labeled routes for L3 VPNs	The 5620 SAM supports RFC 3107 optimization for BGP on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 24-5
SAM-40257	MC LAG without LACP	The 5620 SAM supports the configuration of MC LAGs without LACP signaling on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, 40-1, and 40-2
SAM-40259	R-VPLS with IES (no SDPs)	The 5620 SAM supports the configuration of an R-VPLS binding to an IES for VPLS sites on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	"Routed VPLS" in Section 69.1 Procedure 69-7
SAM-40261	Mixed-mode LSP	The 5620 SAM supports the configuration of mixed-mode LSPs for MPLS service tunnels connected to the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 29-1

(7 of 8)

Feature ID	Feature or function	Description	Book	See
SAM-40263	CRC Ethernet monitoring	The 5620 SAM supports the configuration of CRC alarm thresholds for Ethernet ports on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 17-1
SAM-40265	DEI classification and marking	The 5620 SAM supports DEI classification and color-aware meter configuration for QoS policies on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 15-10, 15-11, and 17-1
SAM-40267	S-PE support for Epipe service using MPLS - static MS-PW	The 5620 SAM supports the configuration of VLL switching sites using MPLS with a static PW on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 68-12
SAM-40275	OSPF as PE-CE protocol	The 5620 SAM supports OSPFv2 configuration for VPRN routing instances on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 72-61
SAM-40279	MAF criteria enhancement - support source TCP/UDP port	The 5620 SAM supports IPv4 and IPv6 addresses for source ports during MAF match entry configuration on the 7210 SAS-X, Release 7.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To configure a site management access filter policy for a managed device"
SAM-47273	BGP AD support for VPLS	The 5620 SAM supports BGP AD for VPLS on the 7210 SAS-X, Release 5.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 69-61

(8 of 8)

7450 ESS and 7750 SR enhancements

The following table lists 7450 ESS and 7750 SR enhancement features for this release of the 5620 SAM.

Table 4-16 7450 ESS and 7750 SR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28052	LAG hold down and hold up timers	The 5620 SAM supports configuring hold down and hold up timers at the port, LAG sub-group, and LAG levels. The timers specify how quickly a LAG responds to operational state changes.	<i>5620 SAM User Guide</i>	Procedures 15-11 and 17-1
SAM-31138	Ethernet symbol error threshold	The 5620 SAM supports configuring ethernet symbol error alarm thresholds on 20-port 1GB SFP and 10GB M1 DWDM tunable MDAs.	<i>5620 SAM User Guide</i>	Procedure 17-1
SAM-40903 SAM-40905	CPM5 and SFM5 support	The 5620 SAM supports the discovery of CPM5 and SFM5 modules in 7450 ESS and 7750 SR nodes. CPM5 modules are removable and are displayed as a separate node in the Equipment tree.	<i>5620 SAM User Guide</i>	—

4 — New features

7705 SAR enhancements

The following table lists 7705 SAR enhancement features for this release of the 5620 SAM.

Table 4-17 7705 SAR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-37972	Multi-instance ISIS	The 5620 SAM supports multi-instance ISIS on the 7705 SAR, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Procedures 24-22 and 24-25
SAM-44262	SSH over IPv6	The 5620 SAM supports SSH over IPv6 on the 7705 SAR, Release 6.1 R4 or later. An SSH session or SSH File Browser is available for in-band or out-of-band IPv6 managed nodes.	<i>5620 SAM User Guide</i>	—
SAM-45277	System time derived from IEEE 1588v2 and GPS	The 5620 SAM supports PTP as a system time reference type on the 7705 SAR-A, 7705 SAR-A T1/E1, 7705 SAR-H, 7705 SAR-Hc, 7705 SAR-M, 7705 SAR-M ASAP, 7705 SAR-W, and 7705 SAR-Wx, Release 6.1 R4 or later. GPS as a system time reference type is supported on the 7705 SAR-H and 7705 SAR-Wx GPS variants, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Procedures 16-10 and 16-11
SAM-45279	RFE 181339: Enable ipv6-filter for management access filter (IPv6 MAF)	The 5620 SAM supports IPv6 MAF on the 7705 SAR, Release 6.1 R4 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To create or modify a site management access filter policy for a managed device"
SAM-47195	ARP fast retry	The 5620 SAM supports configurable ARP fast retry on a network interface, IES L3 access interface, and VPRN L3 access interface, on the 7705 SAR, Release 6.1 R5 or later.	<i>5620 SAM User Guide</i>	Procedures 23-10, 71-45, and 72-50

7750 MG enhancements

The following table lists 7750 MG enhancement features for this release of the 5620 SAM.

Table 4-18 7750 MG enhancements

Feature ID	Feature or function	Description	Book	See
—	7750 MG Release 6.0 R5	The 5620 SAM supports the discovery and management of the 7750 MG Release 6.0 R5.	<i>5620 SAM LTEePC User Guide</i>	—
SAM-29945	Inter-WLAN handover	The 5620 SAM supports Wi-Fi offloading.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-8 and 6-13

(1 of 6)

Feature ID	Feature or function	Description	Book	See
SAM-31475	PM catch-up and file retrieval	The 5620 SAM supports manual and automatic PM statistics file retrieval.	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-1
SAM-40123	Golden configuration enhancements—modification of gateway objects	The 5620 SAM supports: <ul style="list-style-type: none"> the ability to modify the policy or profile parameters associated with a golden configuration clone or snapshot the inclusion of ISM-MG groups in a golden configuration snapshot all policies and profiles in a golden configuration RCA audit 	<i>5620 SAM LTEePC User Guide</i>	Procedures 13-2 and 13-3
SAM-40136	Diameter over SCTP	The 5620 SAM supports the ability to: <ul style="list-style-type: none"> enable or disable SCTP multihoming for Gx, Gy, Rf, and S6b reference points on the PGW configure the maximum number of retransmissions of SCTP paths 	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-10, 19-13, and 19-49
SAM-40138	SCTP multi-homing and multi-streaming	The 5620 SAM supports SCTP on the PGW Gx, Gy, Rf, and S6b reference points, and on the SGW Rf reference point.	<i>5620 SAM LTEePC User Guide</i>	Section 6.1 Procedures 6-3 and 6-10
SAM-40140	HA profiles	The 5620 SAM supports the following HA profiles: <ul style="list-style-type: none"> FA-HA peer list mobile IPv4 	<i>5620 SAM LTEePC User Guide</i>	Sections 6.5 and 19.1 Table 19-2 Procedures 19-15, 19-16, 19-29, and 19-30
SAM-40142	DNS proxy intercept in the HA	The 5620 SAM supports DNS proxy intercept in the HA.	<i>5620 SAM LTEePC User Guide</i>	Section 19.1 Procedure 19-43
SAM-40144	HA 3GPP2 NEMO support	The 5620 SAM supports the ability to configure a PDN APN to act as an HA within a NEMO.	<i>5620 SAM LTEePC User Guide</i>	Section 6.5 Procedure 6-13
SAM-40150	HA Pi EPS peers, paths, and statistics	The 5620 SAM supports: <ul style="list-style-type: none"> the ability to configure a PDN APN to act as an HA to support MIPv4 access in a 3GPP network Pi EPS peers, paths, and statistics the ability to view the PDN APN statistics, attach failure statistics, card statistics, and card flow statistics for Pi EPS peers 	<i>5620 SAM LTEePC User Guide</i>	Procedure 6-10 Chapter 23
SAM-40154	GRE support with key extension	The 5620 SAM supports the ability to set up IP/GRE tunnels between the PGW and remote firewalls that are deployed in front of WAP gateways. The firewalls are configured to send and receive GRE tunnel packets that carry the key field in the GRE header. The key field extensions protect against a configuration mismatch at the two tunnel endpoints.	<i>5620 SAM User Guide</i>	—
SAM-40156	Pause in charging when radio coverage is lost	The 5620 SAM supports the ability to suspend the PGW from charging a subscriber for downlink traffic during loss of radio coverage while the UE is active.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-3 and 6-10

(2 of 6)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-40158	Non-revertive primary gateway after network failover	The 5620 SAM supports the retention of the primary gateway as the standby during a failover, to prevent another failover when normal network behavior resumes. The 5620 SAM also supports the MCRedirectThresholdReached alarm.	<i>5620 SAM LTEePC User Guide</i>	Section 6.9 Procedure 6-27
SAM-40160	Charging profile selection based on PLMN	The 5620 SAM supports the ability to choose the PLMN and SGW or PGW charging profiles for an SGW or PGW instance.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-7 and 6-15
SAM-40168	PGW user plane DSCP transparency	The 5620 SAM supports the transparency of the PGW to the user plane DSCP in the uplink and downlink directions, so that the DSCP marking remains unchanged.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-45
SAM-40184	Dynamic changes to charging profile triggers	The 5620 SAM supports the ability to modify some parameters on the following profiles without shutting down the 7750 MG: <ul style="list-style-type: none"> • CDR AVP option profile • GTP prime server group profile • PGW charging profile • SGW charging profile 	<i>5620 SAM LTEePC User Guide</i>	—
SAM-40192	DSL bonding	The 5620 SAM supports the bonding of LTE and DSL sessions to provide more bandwidth to the UE.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-13 and 19-43
SAM-40196	Selective RADIUS accounting based on specific destination IP	The 5620 SAM supports selective RADIUS accounting, such that RADIUS accounting starts when traffic from a UE is sent to a specific configured destination IP address.	<i>5620 SAM LTEePC User Guide</i>	Procedures 19-5 and 20-5
SAM-45416	SGW change as cause for record closure	The 5620 SAM supports the ability to indicate the cause of SGW relocation as an SGW change for both Ga and Rf. For billing purposes, this helps to differentiate between a normal bearer/session termination and a bearer/session continuation in another SGW.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-53

(3 of 6)

Feature ID	Feature or function	Description	Book	See
SAM-45514	DCM counters to detect congestion to Gx, Gy, and S6b peers	<p>The 5620 SAM supports the following statistics counters that detect congestion to a Gx, Gy, or S6b peer, which can be found on the Statistics Record—<i>peer_type</i> Peer Stats form:</p> <ul style="list-style-type: none"> • Start time in current congestion • Start time in current congestion periodic • End time in current congestion • End time in current congestion periodic • Number of pending messages in current congestion • Number of pending messages in current congestion periodic • Number of RAA messages dropped in current congestion • Number of RAA messages dropped in current congestion periodic • Start time in previous congestion • Start time in previous congestion periodic • End time in previous congestion • End time in previous congestion periodic • Number of RAA messages dropped in previous congestion • Number of RAA messages dropped in previous congestion periodic 	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-2

(4 of 6)

4 – New features

Feature ID	Feature or function	Description	Book	See
SAM-45514	DCM counters to detect congestion to a Gx or Gy peer	<p>Additionally, the 5620 SAM supports the following statistics counters that detect congestion to a Gx or a Gy peer, which can be found on the Statistics Record—<i>peer_type</i> Peer Stats form:</p> <ul style="list-style-type: none"> • Number of CCR initial messages dropped in current congestion • Number of CCR initial messages dropped in current congestion periodic • Number of CCR update messages dropped in current congestion • Number of CCR update messages dropped in current congestion periodic • Number of CCR termination messages dropped in current congestion • Number of CCR termination messages dropped in current congestion periodic • Number of CCR initial messages dropped in previous congestion • Number of CCR initial messages dropped in previous congestion periodic • Number of CCR update messages dropped in previous congestion • Number of CCR update messages dropped in previous congestion periodic • Number of CCR termination messages dropped in previous congestion • Number of CCR termination messages dropped in previous congestion periodic 	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-2
SAM-45514	DCM counters to detect congestion to a Gy or S6b peer	<p>Additionally, the 5620 SAM supports the following statistics counters that detect congestion to a Gy or S6b peer, which can be found on the Statistics Record—<i>peer_type</i> Peer Stats form:</p> <ul style="list-style-type: none"> • Number of ASA messages dropped in previous congestion • Number of ASA messages dropped in previous congestion periodic 	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-2

(5 of 6)

Feature ID	Feature or function	Description	Book	See
SAM-45514	DCM counters to detect congestion to an S6b peer	<p>Additionally, the 5620 SAM supports the following statistics counters that detect congestion to an S6b peer, which can be found on the Statistics Record—S6b Peer Stats form:</p> <ul style="list-style-type: none"> • Number of AAR messages dropped in current congestion • Number of AAR messages dropped in current congestion periodic • Number of STR messages dropped in current congestion • Number of STR messages dropped in current congestion periodic • Number of ASA messages dropped in current congestion • Number of ASA messages dropped in current congestion periodic • Number of AAR messages dropped in previous congestion • Number of AAR messages dropped in previous congestion periodic • Number of STR messages dropped in previous congestion • Number of STR messages dropped in previous congestion periodic 	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-2

(6 of 6)

7950 XRS enhancements

The following table lists 7950 XRS enhancement features for this release of the 5620 SAM.

Table 4-19 7950 XRS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28068	7950 XRS-40 support	The 5620 SAM supports discovering and configuring the 7950 XRS-40 variant of the 7950 XRS.	<i>5620 SAM User Guide</i>	Section 9.16
SAM-42140	RIP support on 7950 XRS nodes	The 5620 SAM supports configuring RIP on routing instances, groups, and services on 7950 XRS nodes, Release 11.0R4 or later.	<i>5620 SAM User Guide</i>	Section 24.4

9500 MPR enhancements

The following table lists 9500 MPR enhancement features for this release of the 5620 SAM.

4 — New features

Table 4-20 9500 MPR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-31645 SAM-40640	MPT-HC and MPT-MC support	The 5620 SAM supports the configuration of MPT-HC and MPT-MC on the electrical ports of the EASv2 card.	<i>5620 SAM MPR User Guide</i>	Section 6.3
SAM-31804 SAM-32534 SAM-40607 SAM-40629 SAM-40648	MPT-HLC support	The 5620 SAM supports the following: <ul style="list-style-type: none"> configuration of MPT-HLC on ports 5 and 6 of the CORE-E card or MSS-1 shelf and on ports 5 to 8 of an EASv2 card configuration of combiner on the MPT-HLC port configuration of radio L1 LAG 	<i>5620 SAM MPR User Guide</i>	Sections 2.1, 5.1, and 6.3 Procedure 5-1
SAM-31816 SAM-40762	MPT-HQAM support	The 5620 SAM supports the configuration of the MPT-HQAM on a 9500 MPR Release 5.2 and later.	<i>5620 SAM MPR User Guide</i>	Section 2.1
SAM-34172	PoE on EASv2 cards	The 5620 SAM supports the configuration of PoE on EASv2 card.	<i>5620 SAM MPR User Guide</i>	Procedure 7-11
SAM-34174	Synchronous Ethernet on EASv2 card	The 5620 SAM supports the configuration of synchronous Ethernet on EASv2 card.	<i>5620 SAM MPR User Guide</i>	Procedure 7-12
SAM-40766	Remote NE auto-discovery	The 5620 SAM supports auto-discovery of the radio links.	<i>5620 SAM MPR User Guide</i>	Section 3.1
—	NEtO distribution for 9500 MPR/9500 MPre 5.2.	The 5620 SAM supports NEtO distribution for the 5.2 node version of the 9500 MPR and 9500 MPre, in addition to the 5.1, 5.0, 4.2, 4.1, and 4.0 releases for 9500 MPR and the 5.1, 5.0, 4.2, and 4.1 releases for 9500 MPre.	<i>5620 SAM MPR User Guide</i>	—

9471 WMM enhancements

The following table lists 9471 WMM enhancement features for this release of the 5620 SAM.

Table 4-21 9471 WMM enhancements

Feature ID	Feature or function	Description	Book	See
9471 WMM management enhancements				
SAM-48865	WMM changes for IMSI to HSS mapping	The 5620 SAM supports the Auto-Assign ID function for IMSI to HSS Routing objects to ensure unique object IDs across the managed network.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-74
SAM-40126	Bulk update for MME instance	The 5620 SAM supports using the bulk operations function for all 9471 WMM objects and the NE instance.	<i>5620 SAM LTEePC User Guide</i>	Section 8.7

(1 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-43184	Support for searching parameter or objects at the 9471 WMM NE level	The 5620 SAM supports the parameter search function for the 9471 WMM.	<i>5620 SAM LTEePC User Guide</i>	Parameter searching Procedure 8-53
SAM-49955	Implement policy version of emergency number table	The 5620 SAM supports a global policy object for emergency number list tables.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-62
9471 WMM enhancements				
SAM-37237	Support for 9471 WMM Release 8.1.0	The 5620 SAM supports discovery and management of 9471 WMM Release 8.1.0.	<i>5620 SAM LTEePC User Guide</i>	—
SAM-41051 m50063-01	SGSN support for 8 bit NRI	The 5620 SAM supports the following objects for this feature: <ul style="list-style-type: none"> • SGSN Node • SGSN NRI List 	<i>5620 SAM LTEePC User Guide</i>	Procedure 9-40 Procedure 9-41
SAM-41075 m20102-01	MME support for S102 based 3G-1X Circuit Voice Hand Down	The 5620 SAM supports the following parameters for this feature: <ul style="list-style-type: none"> • UEPLMN and Served PLMN Service Agreement Profile — S102 SRVCC Allowed • Timers: <ul style="list-style-type: none"> • SRVCC to 1X HO Complete • SRVCC to 1X HO Preparation • MSC To IWS — ISDN Number 	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-50
SAM-41079 m10113-04	WMM support for Enhanced SGW and PGW Isolation for Mode 2 Selection of SGW/PGW	The 5620 SAM supports the following for this feature: <ul style="list-style-type: none"> • Global parameters: <ul style="list-style-type: none"> • 2g3g PGW Isolation • 2g3g SGW Isolation • LTE PGW Isolation • LTE SGW Isolation • PGW Isolation Fault Threshold • SGW Isolation Fault Threshold • Timers: <ul style="list-style-type: none"> • PGW Isolation Declaration Timer • PGW Isolation Duration • SGW Isolation Declaration Timer • SGW Isolation Duration <p>The Signaling Node Admin tab is added to the WMM Instance properties form. You can retrieve a list of gateway objects and send suspend, resume, or delete commands using the 5620 SAM.</p>	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116 for global parameters Procedure 8-117 for timers Signaling node administration
SAM-41083 m10100-07	MME support for Multiple APNs Matching the Wildcard APN	The “Maximum APNs Allowed for Wildcard APN” parameter is added to UE PLMN Services objects.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-123

(2 of 5)

4 – New features

Feature ID	Feature or function	Description	Book	See
SAM-41081 m10128-02	WMM Support for Local Breakout Enhancements	<p>The following parameters are added to UE PLMN Services objects for this feature:</p> <ul style="list-style-type: none"> • MCC 2g3g Home Routed PGW DNS Domain Override • MNC 2g3g Home Routed PGW DNS Domain Override • MCC LTE Home Routed PGW DNS Domain Override • MNC LTE Home Routed PGW DNS Domain Override • 2g3g APN White List • Apply 2g3g APN White List • LTE APN White List • Apply LTE APN White List <p>The following objects are added:</p> <ul style="list-style-type: none"> • APN White List • APN White List NI • LBO IMSI Range Services 	<i>5620 SAM LTE ePC User Guide</i>	<p>Procedure 8-123 for UE PLMN Services</p> <p>Procedure 8-136 for APN White List</p> <p>Procedure 8-137 for APN White List NI</p> <p>Procedure 8-125 for LBO IMSI Range Services</p>
SAM-41073 m10538-02	MME support for PGW Restart - S11	<p>You can select an APN List Name in UE PLMN and Served PLMN Service Agreement Profiles.</p> <p>The following parameters are added to Detach Behavior Mapping Profile objects:</p> <ul style="list-style-type: none"> • PGW Restart NAS Cause Code • PGW Restart Detach Type • PGW Restart Notify Idle UE • PGW Restart Send NAS Cause Code <p>The PGW Restart Recovery timer is added.</p> <p>The PGW Restart Notification global parameter is added.</p>	<i>5620 SAM LTE ePC User Guide</i>	<p>Procedure 8-131 for UE PLMN and Served PLMN Service Agreement Profile</p> <p>Procedure 8-135 for Detach Behavior Mapping Profile</p> <p>Procedure 8-116 for global parameters</p> <p>Procedure 8-117 for timers</p>

(3 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-41069 m10099-07	WMM support for Standards Updates to Dec 2012 for Release 8/9/10/11 - Part 2	<p>You can select an S102 SMS Paging Priority Profile in UE PLMN Services objects.</p> <p>The following parameters are added to Detach Behavior Mapping Profile objects:</p> <ul style="list-style-type: none"> • IMS Delete Bearer Request with No CC Detach Type • IMS Delete Bearer Request with No CC Cause Code • IMS Delete Bearer Request with No CC Notify Idle UE • IMS Delete Bearer Request with No CC Send Cause Code • Delete Bearer Request with CC Detach Type • Delete Bearer Request with CC Cause Code • Delete Bearer Request with CC Notify Idle UE • Delete Bearer Request with CC Send Cause Code • IMS Delete Bearer Request with CC Detach Type • IMS Delete Bearer Request with CC Cause Code • IMS Delete Bearer Request with CC Notify Idle UE • IMS Delete Bearer Request with CC Send Cause Code <p>The S6ad UE Time Zone Retrieval global parameter is added.</p>	<i>5620 SAM LTEePC User Guide</i>	<p>Procedure 8-123 for UE PLMN Services</p> <p>Procedure 8-135 for Detach Behavior Mapping Profile</p> <p>Procedure 8-116 for global parameters</p>
SAM-41049 m10099-08	SGSN support for Standards Updates to Dec 2012 for Release 8/9/10/11	The RAI Value parameter is added to the GTP Control Termination object.	<i>5620 SAM LTEePC User Guide</i>	Procedure 9-12

(4 of 5)

4 – New features

Feature ID	Feature or function	Description	Book	See
SAM-41045 m11400-02	MME support for Additional MME Application provisioning via local CLI - Part 2	<p>You can select Emergency Profiles on shared and home PLMN objects.</p> <p>You can select PLMNs in Paging Policy objects.</p> <p>The following parameters are added to Emergency Profile objects:</p> <ul style="list-style-type: none"> Emergency Profile ID APN Network Identifier Emergency Profile Name Description <p>You can select the following objects on Emergency Profile objects:</p> <ul style="list-style-type: none"> Emergency Number Table Emergency GMLC Primary Emergency GLMC Alternate <p>You can select Emergency Number List Tables on Emergency Number objects.</p> <p>The Emergency Number List Table object is added.</p> <p>The following parameters are added to CSFB Paging Priority Profile objects:</p> <ul style="list-style-type: none"> CSFB Paging Priority Profile ID CSFB Paging Priority Profile Name Description <p>The following parameters are added to CSFB eMLPP Paging Priority Profile objects:</p> <ul style="list-style-type: none"> CSFB Paging Priority Profile ID CSFB Paging Priority Profile Name <p>The Paging Priority Profile Table object is added.</p> <p>The following parameters are added to the S102 Paging Priority Profile object:</p> <ul style="list-style-type: none"> S102 Paging Priority Profile Name Description <p>Parameters for the following are added:</p> <ul style="list-style-type: none"> Ciphering Algorithm Integrity Algorithm 	<i>5620 SAM LTE ePC User Guide</i>	<p>Procedure 8-61 for PLMN</p> <p>Procedure 8-99 for Paging Policy</p> <p>Procedure 8-106 for Emergency Profile</p> <p>Procedure 8-105 for Emergency Number</p> <p>Procedure 8-142 for Emergency Number List Table</p> <p>Procedure 8-101 for CSFB Paging Priority Profile</p> <p>Procedure 8-102 for CSFB eMLPP Paging Priority Profile</p> <p>Procedure 8-143 for Paging Priority Profile Table</p> <p>Procedure 8-133 for S102 Paging Priority Profile</p> <p>Procedure 8-140 for Ciphering Algorithm</p> <p>Procedure 8-141 for Integrity Algorithm</p>

(5 of 5)

eNodeB enhancements

The following table lists eNodeB enhancement features for this release of the 5620 SAM.

Table 4-22 eNodeB enhancements

Feature ID	Feature or function	Description	Book	See
SAM-37686	Undo last license file import	The 5620 SAM supports re-importing an older RAN license file in the event of problems with a new license file.	<i>5620 SAM LTE RAN User Guide</i>	—
SAM-39028	5620 SAM management of workorder priority	The 5620 SAM assigns priority levels to activation sessions based on their origin (OSS or GUI) to prevent OSS applications from blocking user-created activation sessions.	<i>5620 SAM LTE RAN User Guide</i>	Activation session priority
SAM-42181	OLC state settable for all objects	The 5620 SAM supports OLC state management for eNodeB NEs and logical objects.	<i>5620 SAM LTE RAN User Guide</i>	Section 17.3
SAM-37161	5620 SAM Network wide logical tree view	The 5620 SAM equipment navigation tree features a “Wireless Logical RAN” view that displays eNodeB NEs and logical objects.	<i>5620 SAM LTE RAN User Guide</i>	Section 7.3
SAM-41020	Custom 5620 SAM LTE RAN-ePC workspace and RAN workspace enhancement	The 5620 SAM features the following dedicated workspaces for wireless management: <ul style="list-style-type: none"> Wireless_RAN—includes LTE RAN and small cell main menu functions Wireless_RAN_ePC—includes LTE RAN and ePC main menu functions Wireless_ePC—includes LTE ePC main menu functions 	<i>5620 SAM LTE RAN User Guide</i>	Section 3.4
SAM-36654	Self-configuration of an eNodeB whatever the version pre-provisioned into the 5620 SAM	The 5620 SAM is enhanced to allow successful eNodeB self-configuration and management when the software release of the pre-provisioned NE instance does not match the running software release on the eNodeB.	<i>5620 SAM LTE RAN User Guide</i>	Section 5.3 Pre-provisioned NE instances
SAM-36891	Alarm flow reduction	The raising conditions of some hardware alarms are changed to reduce their frequency. The severity of LTE service alarms is increased to enhance visibility. Composite equipment and link down alarms based on administrative state alarms are suppressed. Administrative state changes are now reflected by attribute value change logs.	<i>5620 SAM LTE RAN User Guide</i>	Section 18.1

OmniSwitch enhancements

The following table lists OmniSwitch enhancement features for this release of the 5620 SAM.

4 — New features

Table 4-23 OmniSwitch enhancements

Feature ID	Feature or function	Description	Book	See
SAM-40522	SPB support for OS 10K	The 5620 SAM supports Shortest Path Bridging (SPB) on OS 10K NEs, Release 7.3.2 and later.	<i>5620 SAM User Guide</i>	Chapter 73

Small Cell enhancements

This release of the 5620 SAM introduces support for Small Cell management. See the *5620 SAM Small Cells User Guide* for information about configuring Small Cells using the 5620 SAM.

4.3 5620 SAM Release 12.0 R3 features

The tables in this section list the features added in 5620 SAM Release 12.0 R3 and described in 5620 SAM customer documentation.

7705 SAR enhancements

The following table lists 7705 SAR enhancement features for this release of the 5620 SAM.

Table 4-24 7705 SAR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-20721	4-port channelized OC3/OC12 ASAP SFP MDA	The 5620 SAM supports the configuration of APS and MC APS on the 4-port channelized OC3/OC12 ASAP SFP MDA on the 7705 SAR-8, 7705 SAR-8v2, and 7705 SAR-18, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Chapter 35
SAM-31741	Network-side MLPPP support on 4-port channelized OC3/OC12 ASAP SFP MDA	The 5620 SAM supports network-side MLPPP on the 4-port channelized OC3/OC12 ASAP SFP MDA on the 7705 SAR-8, 7705 SAR-8v2, and 7705 SAR-18, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Section 16.5 Procedures 16-46, 16-47, and 16-48
SAM-31743	Per-VLAN NW egress shapers	The 5620 SAM supports the configuration of egress shapers on the 7705 SAR, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Procedures 17-1 and 23-10
SAM-37946	Static destination NAT	The 5620 SAM supports static destination NAT on the 7705 SAR, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Chapter 61 Procedure 61-2
SAM-39754	Differential clock on 4p DS3 card	The 5620 SAM supports a differential clock on the 4-port DS3 card on the 7705 SAR, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 17-32

(1 of 2)

Feature ID	Feature or function	Description	Book	See
SAM-39762	PoE show menus at NE or shelf level	You can view information about power consumption and availability on the PoE tab of the shelf properties form on the 7705 SAR-H, 7705 SAR-Hc, 7705 SAR-W, and 7705 SAR-Wx, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 17-20
SAM-39772	RFE 172072 LDP export policy support	The 5620 SAM supports the configuration of an LDP export policy on the 7705 SAR, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 24-13
SAM-39774	RFE 168980 access egress filters	The 5620 SAM supports the configuration of an ACL egress filter on an IES or VPRN L3 access interface on the 7705 SAR, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Procedures 71-30 and 72-30
SAM-39780	RIP support at PE-CE	The 5620 SAM supports the configuration of RIP, RIP groups, and RIP interfaces on a VPRN routing instance on the 7705 SAR, Release 6.1 R4 or later.	<i>5620 SAM User Guide</i>	Section 24.17 Procedure 72-54
SAM-41427	Rate for MPLS exception messages	The 5620 SAM supports the configuration of rate limits for VPRN network exceptions on the 7705 SAR, Release 4.0 R6 or later.	<i>5620 SAM System Administrator Guide</i>	Procedure "To view or configure the system security settings on managed NEs"
SAM-42149	Shaper policy support	The 5620 SAM supports the configuration of a QoS Shaper policy on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 44-27

(2 of 2)

4.4 5620 SAM Release 12.0 R2 features

The tables in this section list the features added in 5620 SAM Release 12.0 R2 and described in 5620 SAM customer documentation.

5620 SAM wireless OSS enhancements

The following table lists eNodeB enhancement features for this release of the 5620 SAM.

Table 4-25 5620 SAM wireless OSS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-41936	eNB login banner configuration	You can use the 5620 SAM-O to set eNodeB SSH login banner text.	<i>5620 SAM Wireless OSS Interface Developer Guide</i>	Chapter 8

9471 WMM enhancements

The following table lists 9471 WMM enhancement features for this release of the 5620 SAM.

4 — New features

Table 4-26 9471 WMM enhancements

Feature ID	Feature or function	Description	Book	See
9471 WMM management enhancements				
SAM-38297	9471 WMM PM watchdog timer and alarm	The 5620 SAM raises the <i>WMMPMFileNotificationMissing</i> alarm when PM file notifications are not received from an NE within a set time period, indicating a communications error.	<i>5620 SAM LTEePC User Guide</i>	Missing PM file notification alarm
9471 WMM enhancements				
SAM-31422	Support for 9471 WMM Release 8.0.0 M1	The 5620 SAM supports discovery and management of 9471 WMM Release 8.0.0 M1.	<i>5620 SAM LTEePC User Guide</i>	—
SAM-37141 m10920-01	WMM support for support for sending mapped GUMMEI to eNB in S1 setup and MME configuration update	This feature adds the “Include Mapped GUMMEI” global parameter.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116
SAM-37143 m11310-03	WMM support for same IP address for different S6a diameter connections	This feature adds the “Priority Group” option to the Load Balance parameter in IMSI to HSS Routing objects.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-74
SAM-37139 m10103-11	SGSN support SRV query for PGW/GGSN	This feature adds the “GN SGSN SRV” global parameter.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116

9500 MPR enhancements

The following table lists 9500 MPR enhancement features for this release of the 5620 SAM.

Table 4-27 9500 MPR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-31631	Cross and intra LAG configuration support	The 5620 SAM supports configuration of cross and intra LAGs for MPT-HLS.	<i>5620 SAM MPR User Guide</i>	Section 5.1
SAM-32532	MPT-HLS support	The 5620 SAM supports configuration of MPT-HLS on core-enhanced cards and EASv2 cards.	<i>5620 SAM MPR User Guide</i>	Section 2.1 Procedure 6-7
SAM-38381	EASv2 card support for MPT-HLS	The 5620 SAM supports viewing the adaptive modulation values for the usage time 512 QAM and 1024 QAM in MPT-HLS	<i>5620 SAM MPR User Guide</i>	Section 6.5

eNodeB enhancements

The following table lists eNodeB enhancement features for this release of the 5620 SAM.

Table 4-28 eNodeB enhancements

Feature ID	Feature or function	Description	Book	See
SAM-41758	Manual management of CT AUX switchover	In the event of a CT AUX server switchover, you can disable the automatic reallocation of eNodeBs to the newly active CT AUX server and manually trigger the reallocation during a maintenance window.	<i>5620 SAM LTE RAN User Guide</i>	Managing CT AUX switchover
SAM-23452	5620 SAM to accept work orders transferred from WPS in ZIP format	WO and snapshot files transferred between the 5620 SAM and the 9952 WPS are now zipped for faster transfer times.	<i>5620 SAM LTE RAN User Guide</i>	—

4.5 5620 SAM Release 12.0 R1 features

The tables in this section list the features added in 5620 SAM Release 12.0 R1 and described in 5620 SAM customer documentation.

5620 SAM application enhancements

The following table lists 5620 SAM application enhancement features for this release of the 5620 SAM.

Table 4-29 5620 SAM application enhancements

Feature ID	Feature or function	Description	Book	See
SAM-32187	Standalone web Fault Management application	The new standalone Fault Management web application allows you to: <ul style="list-style-type: none"> • monitor alarms at the network level using a list with quick and simple filtering capabilities • monitor alarms at the network level based on NEs that have the most alarms, using an NE-based view • view alarms based on an impact analysis of the alarms and identify alarms at the root cause 	<i>5620 SAM User Guide</i>	Chapter 3

5620 SAM system management enhancements

The following table lists 5620 SAM system management enhancement features for this release of the 5620 SAM.

Table 4-30 5620 SAM system management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28693	All 5620 SAM processes on RHEL systems owned by samadmin user	For increased system security, each 5620 SAM system process on a RHEL platform now runs with samadmin as the process owner.	<i>5620 SAM User Guide</i>	—
SAM-34789	RHEL iptables firewall	After you install or upgrade a 5620 SAM system on RHEL, you can configure an iptables and ip6tables firewall for additional security. A 5620 SAM installation or upgrade creates preconfigured iptables and ip6tables template files for different deployment types.	<i>5620 SAM Planning Guide</i> <i>5620 SAM 5650 CPAM Installation and Upgrade Guide</i>	—

5620 SAM wireless OSS enhancements

The following table lists 5620 SAM wireless OSS enhancement features for this release of the 5620 SAM.

Table 4-31 5620 SAM wireless OSS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28695	5620 SAM support of templates and geo-based self-configuration for MCO	The 5620 SAM supports template-based self-configuration for MCO eNodeBs.	<i>5620 SAM Wireless OSS Interface Developer Guide</i>	Section 7.3

5620 SAM XML OSS enhancements

The following table lists 5620 SAM XML OSS enhancement features for this release of the 5620 SAM.

Table 4-32 5620 SAM XML OSS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-20763	7210 SAS-R support	The 5620 SAM-O supports management of the 7210 SAS-R, Release 6.1 R1.	<i>5620 SAM XML OS S Interface Developer Guide</i>	—
SAM-32224	5620 SAM-O request buffering with priority and timeout	To help the 5620 SAM smoothly manage bursts of OSS requests, you can configure the following for a 5620 SAM user or user group: <ul style="list-style-type: none"> an OSS request timeout value an OSS request priority 	<i>5620 SAM XML OS S Interface Developer Guide</i>	“OSS user and group management” in section 3.4 “Inventory commands” in Appendix A
SAM-28569	5620 SAM-O JMS subscription limit increase	Depending on the available platform resources, the 5620 SAM supports up to 20 concurrent JMS connections.	<i>5620 SAM XML OS S Interface Developer Guide</i> <i>5620 SAM Planning Guide</i>	—

Device management enhancements

The following table lists device management enhancement features for this release of the 5620 SAM.

Table 4-33 Device management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-13150	OCSP support	The 5620 SAM supports configuring certificate authority profiles, IPSec gateways, and IPSec tunnels to use OCSP for authentication.	<i>5620 SAM User Guide</i>	Procedures 31-8 and 31-10 Procedure “To configure a PKI certificate authority profile” in the <i>5620 SAM System Administrator Guide</i>
	OCSP cache clearing	The 5620 SAM supports clearing stored certificates from the OCSP cache on a node.	<i>5620 SAM System Administrator Guide</i>	Procedure “To manage OCSP cache entries on an NE”
SAM-13152	CMPv2 support	The 5620 SAM supports configuring CMPv2 parameters on certificate authority profiles, and performing CMPv2 actions.	<i>5620 SAM System Administrator Guide</i>	Procedure “To configure a PKI certificate authority profile” and “To perform CMPv2 actions”

(1 of 2)

4 – New features

Feature ID	Feature or function	Description	Book	See
SAM-28057	Password history and password complexity improvements	The 5620 SAM supports configuring password complexity requirements in site password policies, and clearing the history of previously-used passwords for a user on a managed object.	<i>5620 SAM System Administrator Guide</i>	Procedures “To create or modify a password policy and “To clear the password history of a user on a managed device”
SAM-20763	Support of new 7210 SAS-R hardware	The 5620 SAM supports management of the 7210 SAS-R, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Section 9.5
SAM-28252	IPv4 and IPv6 DNS security extensions	The 5620 SAM supports configuring DNS security options on 7450 ESS, 7710 SR, 7750 SR, and 7950 XRS nodes, Release 12.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 14-31

(2 of 2)

GUI enhancements

The following table lists GUI enhancement features for this release of the 5620 SAM.

Table 4-34 GUI enhancements

Feature ID	Feature or function	Description	Book	See
SAM-20441	Workspace enhancements - customize manager windows	The 5620 SAM supports the customization of object types selector and buttons on some list forms from the workspace manager.	<i>5620 SAM User Guide</i>	Procedure 5-9
SAM-34776	Import and Export functionality for workspaces and tab preferences	The 5620 SAM supports the export and import of custom tab preferences of a single user. A system administrator can export all or import workspaces and tab preferences or export or assign tab preferences of a user(s).	<i>5620 SAM User Guide</i>	Procedures 4-23, 4-24 Procedure “To export all workspaces and tab preferences” in the <i>5620 SAM System Administrator Guide</i> Procedure “To import workspaces and tab preferences” in the <i>5620 SAM System Administrator Guide</i>
SAM-34805	Default file type extension while saving a form to file	The 5620 SAM supports the setting of the default file type extension when saving a list form to file using the Save To File option.	<i>5620 SAM User Guide</i>	Procedure 4-20

(1 of 2)

Feature ID	Feature or function	Description	Book	See
SAM-35104	Allows the launching of a 5620 SAM client with a user name and password	The 5620 SAM supports the launching a single-user 5620 SAM client from a windows station or on a RHEL or Solaris station with a user login name and password.	<i>5620 SAM User Guide</i>	Procedures 4-1, 4-2
—	Paste object attributes into an advanced filter	The 5620 SAM supports copying and pasting of object attributes into an advanced filter, using the Paste Attribute from Clipboard button.	<i>5620 SAM User Guide</i>	Procedure 4-28

(2 of 2)

Network management enhancements

The following table lists network management enhancement features for this release of the 5620 SAM.

Table 4-35 Network management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-12837	SNMP streaming	The 5620 SAM supports the use of SNMP streaming for MIB-based configuration data transfers on Release 11.0 R5 and later 7450 ESS, 7710 SR, 7750 SR, or 7950 XRS. SNMP streaming substantially reduces the time required for large data transfers in a high-latency network, for example, during network discovery and object resynchronization.	<i>5620 SAM User Guide</i>	
SAM-28050	OpenFlow support	The 5620 SAM can act as an OpenFlow controller. You can use the 5620 SAM to configure and enable an OpenFlow switch on a Release 12.0 or later 7450 ESS, 7750 SR, or 7950 XRS that has an IOM3. After the initial OpenFlow switch configuration, the 5620 SAM uses the OpenFlow protocol to manage routing functions on the switch.	<i>5620 SAM User Guide</i>	Chapter 25

(1 of 3)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28356	MLD for ESM	MLD functionality for IPoE and PPPoE hosts. Several IGMP features matched for MLD. MCS redundancy to synchronize subscriber information. <ul style="list-style-type: none"> • MLD policy (procedure 56-21) • Group Interface Query Source IP Address configuration on routing instance or VPRN routing instance (procedure 24-61) • Query Interval and Last Member Query Interval configuration on MLD interface (procedure 24-62) • MLD group interface configuration on base routing instance, VPRN, and IES (procedures 24-64 and 24-65) • MLD option on MC peer group (procedure 37-1) 	<i>5620 SAM User Guide</i>	Section 24.1 Workflow 24.13
SAM-28358	Unique subnet per subscriber for IPoE	Support for virtual subnet configuration on IES and VPRN subscriber interfaces.	<i>5620 SAM User Guide</i>	Procedures 72-67 and 71-14
SAM-28374	WPP 2.0	Web portal protocol enhancements, including WPP 2.0 and subscriber creation triggered by WPP messages.	<i>5620 SAM User Guide</i>	Section 24.1 Workflow 24.15 Procedures 24-68, 66-5, 71-16, and 72-69
SAM-28395 SAM-28376	Local user database enhancements	The following changes are implemented in the local user database: <ul style="list-style-type: none"> • DHCP host object renamed as IPoE host. All affected attributes renamed accordingly. • Configurable GI address, IPv6 DHCP server address, and IPv6 link address on IPoE host. 	<i>5620 SAM User Guide</i>	Procedure 66-5
SAM-28408	Multiple NAT policies	On an inside NAT configuration, NAT policies can be assigned separately to NAT destination prefixes and static port forwards, as well as to ACL IP and IPv6 filter policy entries.	<i>5620 SAM User Guide</i>	Section 26.1 and Procedures 45-2, 45-3, and 26-4
SAM-28410	Wi-Fi offload: dual-stack UE support	Support for dual-stack (IPv4/IPv6) Wi-Fi subscribers. <ul style="list-style-type: none"> • IPv6 match option on RADIUS proxy cache on local user database, IPoE host • On Link prefix option for IPv6 router advertisement on IES and VPRN group interface • IPv6 configuration allowed on IES and VPRN soft GRE group interface 	<i>5620 SAM User Guide</i>	Procedures 66-5, 71-16 and 72-69
SAM-28416	NAT pool redundancy enhancement	Follow NAT Pool configuration for redundant NAT pools in a pool fate sharing group.	<i>5620 SAM User Guide</i>	Section 26.1 and Procedure 26-4

(2 of 3)

Feature ID	Feature or function	Description	Book	See
SAM-28418	Wi-Fi offload: interim updates upon UE location change	<p>The following enhancements allow UE location changes to be sent to the AAA RADIUS server as a UE switches between APs:</p> <ul style="list-style-type: none"> • Report UE Wi-Fi Location parameter on mobile gateway profile configuration (Procedure 56-16) • ARP AP parameter on IES and VPRN group interface, WLAN GW configuration (Procedures 71-18 and 72-72) • Interim Update parameter on base routing instance, WLAN GW configuration (Procedure 23-1) • New tracked accounting packets options on RADIUS proxy server configuration on base and VPRN routing instance (Procedures 23-8 and 72-9) • DHCP configuration under soft GRE group interface moved under default WLAN GW, VLAN tag range configuration on IES and VPRN group interface for 7750 SR, Release 12.0 and later (Procedures 71-18 and 72-72) 	<i>5620 SAM User Guide</i>	Chapter 36
SAM-35684	Equipment Manager displays licensed product information	The 5620 SAM Equipment Manager displays Licensed Product and Licenses Consumed columns for licensed objects such as chassis, cards, and card child objects.	<i>5620 SAM User Guide</i>	Section 18.1
SAM-36590	Software upgrade activation scheduling	<p>A 5620 SAM operator can independently perform the image download and software activation tasks associated with a device software upgrade.</p> <p>For example, you can schedule the software image downloads to occur before the image activations, which you perform later as a separate task.</p>	<i>5620 SAM System Administrator Guide</i>	"Managing NE software upgrades" and Procedure "To create a software upgrade policy"
SAM-36453	Host retrieval based on IP/MAC address	You can narrow a residential subscriber host search by specifying a host IP address and MAC address.	<i>5620 SAM User Guide</i>	Procedures 66-2, 66-3, 66-12, 66-13, 66-20

(3 of 3)

OAM and service testing enhancements

The following table lists OAM and service testing enhancement features for this release of the 5620 SAM.

4 — New features

Table 4-36 OAM and service testing enhancements

Feature ID	Feature or function	Description	Book	See
SAM-24570	Stop and Resume Operation for Policy Release/Distribution	The 5620 SAM now supports a stop and restart capability for the distribution of policies. A status indication is also provided in the distribution framework.	<i>5620 SAM User Guide</i>	Procedure 43-3
SAM-24779	MEF PM Binning & Availability	The 5620 SAM now supports the configuration of specific OAM diagnostic tests and the collection of the associated performance monitoring data in a new statistics record type referred to as Complete-PM. The collected statistics can subsequently be viewed from the STM or the Statistics Manager.	<i>5620 SAM User Guide</i>	Procedures 80-1, 80-8, 80-13, and 80-14
SAM-24826	Associate generated test and test entity in list(s)	For a test suite's generated tests, the entries now indicate which specific test entity the test is generated for.	<i>5620 SAM User Guide</i>	Procedure 80-3
SAM-28127	CFM remote MEP Auto-discovery	The 5620 SAM now allows automatic detection and addition of remote MEPs to the Maintenance Associations and Maintenance Entity Groups.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-28137	ETH-AIS Decouple for CCM	A CFM ETH-AIS message can now be triggered or cleared based on the state of the entity on which the DOWN MEP is configured.	<i>5620 SAM User Guide</i>	Procedure 82-1
SAM-28141	MEF 30 compliance	A number of attributes are introduced for the purpose of MEF 30 compliance.	<i>5620 SAM User Guide</i>	Procedures 81-3 and 82-1
SAM-28620	Referenced OAM test result	The 5620 SAM now allows you to view and compare OAM diagnostic test results on the STM	<i>5620 SAM User Guide</i>	Procedures 80-6 and 80-7
SAM-29035	ETH-CFM Squelch Ingress Levels	The 5620 SAM now supports the squelching of the ETH-CFM packets at ingress levels for security purposes. This applies to VPLS SAPs and SDP bindings.	<i>5620 SAM User Guide</i>	Procedures 69-39 and 69-76
SAM-31291	DCP Group Configuration Enhancements	The AA DCP groups function is enhanced to provide the following: <ul style="list-style-type: none"> • more effective data summarization, so fewer records sent to 5670 RAM • separate Internet and VPN traffic groups • more granular subnet match criteria 	<i>5620 SAM User Guide</i>	"DCP groups" in section 78.4
SAM-31973	SAP and application-based Apdex configuration	You can configure tier-based Apdex thresholds on an ISA-AA group policy, application group, or application. A child threshold overrides a parent threshold.	<i>5620 SAM User Guide</i>	"Apdex reporting" in section 78.4
SAM-32236	SAP tier for refined Apdex calculations	When application performance reporting is enabled on a service, you can assign an Apdex tier to a SAP, spoke SDP binding, or business transit subscriber. See SAM-31973 for information about the Apdex configuration enhancements.	<i>5620 SAM User Guide</i>	"Apdex reporting" in section 78.4

Protocol enhancements

The following table lists protocol enhancement features for this release of the 5620 SAM.

Table 4-37 Protocol enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28823	Immediate LSP re-optimization on receipt of ISIS overload bit	When you perform maintenance on an NE, you can configure the Retry on IGP Overload parameter so the NE is not used for transit IP and MPLS traffic. The ingress LER immediately tears down and re-signals all LSP paths away from a transit LSR which advertised the IS-IS overload bit.	<i>5620 SAM User Guide</i>	Procedure 27-2
SAM-28290	Dynamic bypass re-optimization	You can use the 5620 SAM to configure the periodic re-optimization of the path of a dynamic bypass LSP that is associated with an RSVP P2P/P2MP LSP. The 5620 SAM performs the re-optimization at each expiry of a bypass LSP resignal timer.	<i>5620 SAM User Guide</i>	Procedure 27-2
SAM-29032	Delayed deletion of BGP advertised next-hop labels	You can configure the BGP Labels Hold Timer (seconds) parameter to delay the deletion of the BGP label on the ingress NE.	<i>5620 SAM User Guide</i>	Procedure 27-2
SAM-29061	Enhancement to ISIS LSP	You can configure the Ignore LSP Errors parameter on the ISIS protocol under base and VPRN routing instances to ignore ISIS LSP errors and to not purge the associated record.	<i>5620 SAM User Guide</i>	Procedure 24-20
SAM-29551	Propagate OSPF alarm to root	In the OSPF Network view, an alarm indicator at the network level shows the highest severity alarm colour.	<i>5620 SAM User Guide</i>	—
SAM-31991	Min AS Origination	The Min AS Origination parameter is removed from the BGP base and VPRN level configuration for BGP peers, groups, and sites.	<i>5620 SAM User Guide</i>	Procedure 24-2, 24-4, and 24-5

Policy enhancements

The following table lists policy enhancement features for this release of the 5620 SAM.

Table 4-38 Policy enhancements

Feature ID	Feature or function	Description	Book	See
SAM-15401	EAP authorization support for IKEv2 remote access tunnel	In addition to authentication using public key signatures and shared secrets, IKE supports authorization using EAP. The 5620 SAM supports EAP authorization method and self-authorization method.	<i>5620 SAM User Guide</i>	Procedure 31-1

(1 of 5)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-23030	Subscriber retention attribute on NAT policy	The NAT policy supports a subscriber retention timeout configuration for NAT subscribers and associated IP addresses.	<i>5620 SAM User Guide</i>	Section 26.1 and Procedure 26-2
SAM-28044	CLI/SNMP filter parity with new OF/flowspec actions (redirect tunnel/VRF, match IPv6 flow Label)	Policy-based forwarding is enhanced to include redirection to RSVP-TE/MPLS-TP LSPs. Policy-based routing is enhanced to include redirection to VRF/GRT. This feature also includes Flow label match criterion for IPv6 line card filters, and TCP/UDP port match enhancements for ACL IP and IPv6 filter policies.	<i>5620 SAM User Guide</i>	Procedures 45-2 and 45-3
SAM-28060	CPU Protection: log events for out-profile-rate, additional protocols for ip-src-monitoring	Enhancements are provided to existing SR CPU protection, including: rate-limiting enhancement (DoS protection) and traffic-limiting enhancement (DDoS protection). The use of IP Src Monitoring is also extended.	<i>5620 SAM User Guide</i> <i>5620 SAM System Administrator Guide</i>	Procedures 56-8, 71-22, 72-22 and 72-69. Refer also to the <i>5620 SAM System Administrator Guide</i> .
SAM-28093	QoS: ip /ipv6/ mac-criteria action to define policer for SAP ingress only	This feature classifies ingress traffic into different Forwarding Classes. It then allows OAM messages within each Forwarding Class to bypass the SAP ingress queue QoS control by redirecting the traffic to different ingress bypass policers.	<i>5620 SAM User Guide</i>	Procedure 44-1
SAM-28095	QoS: Egress dot1P Remarking of both inner and outer Qtags	The 5620 SAM now allows the separate remarking of the inner and outer VLAN tag L2 QoS bits (dot1p and DE) at a SAP egress to different values.	<i>5620 SAM User Guide</i>	Procedure 44-3
SAM-28097	3K QoS Policy (per system)	The 5620 SAM now allows 3070 SAP ingress and 3070 SAP egress QoS policies to be created per system, excluding the default policies. New statistics for the SAP Ingress and Egress QoS policies are added from the FP resource usage table.	<i>5620 SAM Statistics Management Guide</i>	—
SAM-28101	QoS/Filter policies with masks for IPv6 addresses	Attributes Src Net Mask and Dst Net Mask are introduced to IPv6 ACL filter and SAP Ingress and SAP Egress policies.	<i>5620 SAM User Guide</i>	Procedure 44-1, 44-3, and 45-2.
SAM-28103	HQoS second pass or background pass for minimum distribution	This features adds a few enhancements to Hierarchical QoS in the following areas: <ul style="list-style-type: none"> • Advanced Configuration Policy • Scheduler policy • Scheduler policy • Egress Scheduling on Virtual Ports • Egress Queue Group • Aggregation Scheduler • Limit Unused Bandwidth attribute on service SAPs 	<i>5620 SAM User Guide</i>	Procedures 44-15, 44-25, 44-32, 17-9, 64-1, 64-2, 71-16, 71-27, 68-35, 69-28, 69-72, 72-27, and 72-67.
SAM-28107	Ingress buffer allocation	This feature allows the user to configure a per-FP ingress buffer allocation percentage in the range of 20% to 80%.	<i>5620 SAM User Guide</i>	Procedure 16-33
SAM-28111	Policer rate increase from 20G to a higher rate	Policer rates are increased to higher rate in the 5620 SAM.	<i>5620 SAM User Guide</i>	Procedure 44-20

(2 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-28162	Route policy parameter support - without expressions	This feature introduces Routing policy parameterization, which allows Community lists, Prefix lists, AS Paths, and AS Path Groups to be treated as variables.	<i>5620 SAM User Guide</i>	Procedures 23-15 and 23-31
SAM-28210	Community-list expression support for matching only specifically defined communities (exact match)	The 5620 SAM now supports an Exact Match attribute within the routing policy context of community expressions.	<i>5620 SAM User Guide</i>	Procedure 23-15
SAM-28232	IPv4 MCAC with source awareness	This feature enhances the existing IPv4 MCAC policy support by adding multicast source awareness for IPv4. Operators can now configure channels in a multicast MCAC bundle with a specific multicast source address.	<i>5620 SAM User Guide</i>	Procedure 46-3
SAM-28362	IP-only counters for session	Volume stats type configuration on subscriber profile specifies type of subscriber host accounting data reported in RADIUS accounting message.	<i>5620 SAM User Guide</i>	Procedure 56-2
SAM-28364	Separate counters for IPv4 and IPv6 in PPP sessions	V4-V6 statistics mode option on SLA profile ingress/egress queue override and ingress/egress policer override objects. V4-V6 statistics mode option on subscriber profile ingress HSMDB queue override, ingress HSMDB policer override, and egress HSMDB queue override objects. IPv6 aggregate statistics RADIUS attribute option on RADIUS accounting policy.	<i>5620 SAM User Guide</i>	Procedures 56-3, 56-2, and 50-1
SAM-28366	IP filter allow RADIUS override	IP filter policy and IPv6 filter policy entries support RADIUS override of redirect URL. A read-only One-Time HTTP Redirect URL Override parameter is added to the subscriber host properties form.	<i>5620 SAM User Guide</i>	Procedures 45-2 and 45-3
SAM-28368	PPPoE session re-establishment	The Re-establish Session configuration on a PPP policy allows a PPP PADI to resume an existing PPPoE session after it has abnormally terminated.	<i>5620 SAM User Guide</i>	Procedure 56-7
SAM-28378	Subscriber per PPPoE session index	Two or more PPPoE sessions belonging to the same subscriber on the same SAP can have distinct QoS queues while retaining the same SLA profile. <ul style="list-style-type: none"> Local egress scheduler policy and scheduler override configuration on SLA profile (Procedure 56-3) Tier 1 Parent Location configuration on scheduler policy (Procedure 44-15) Parent Location configuration on access egress policy (Procedure 44-3) SAP Session Index RADIUS option on subscriber authentication policy. 	<i>5620 SAM User Guide</i>	Section 56.1

(3 of 5)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28386	Gx for ESM	<p>Policy management via Gx interface allows consolidated policy management for wireline and wireless environment in single (PCRF) system. Supported in 7750 SR, 7710 SR, and 7450 ESS, Release 12.0 and later.</p> <ul style="list-style-type: none"> • Diameter policy split into new diameter peer policy and diameter application policy objects (procedures 50-9 and 56-22) • Diameter application policy binding on credit control policy (procedure 56-11) • Diameter application policy binding on local user database IPoE and PPP hosts (procedure 66-5) • Diameter application policy binding on VPRN and IES group interfaces (procedures 71-16 and 72-69) 	<i>5620 SAM User Guide</i>	Sections 50.1 and 56.1
SAM-28388	Python-RADIUS enhancements	<p>New configurable python script and python policy objects. Python policy can be configured on the following objects:</p> <ul style="list-style-type: none"> • Base routing instance (procedures 23-7 and 23-8) • RADIUS server policy (procedure 50-4) • IES group interface (procedure 71-16) • VPRN group interface (procedure 72-69) 	<i>5620 SAM User Guide</i>	Section 51.1 Procedures 51-1 and 51-3
SAM-28414	GTP local breakout filter policy action	<p>IP Filter policy entries support a GTP local breakout action. This action applies to a WLAN-GW for Wi-Fi subscriber traffic that is marked as GTP-tunneled to the GGSN/PGW. It diverts the selected traffic that would normally be GTP-tunneled to local breakout through NAT instead.</p>	<i>5620 SAM User Guide</i>	Section 36.1 Workflow 36.3 Procedure 45-2
SAM-29033	H-QoS egress scheduling enhancements	<p>The H-QoS egress scheduling hierarchy has been enhanced to allow the following parenting:</p> <ul style="list-style-type: none"> • Subscriber related • PW-SAP for IES/VPRN related <p>This is configured in the following areas:</p> <ul style="list-style-type: none"> • Scheduler policy • Access Egress Policy • SLA profile 	<i>5620 SAM User Guide</i>	Procedures 44-3, 44-15, 56-3, 17-9, and 64-1
SAM-30111	TACACS+ Enhancements: one-time password for telnet	<p>Support of an interactive authentication scheme with TACACS+ has been added. Interactive authentication allows the TACACS+ server to provide prompts and messages to the user during the user and password queries.</p>	<i>5620 SAM System Administrator Guide</i>	—

(4 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-31991	Task 154953 Converting L2TP accounting policy into generic RADIUS server policy	The 5620 SAM supports the configuration of the RADIUS Server Policy attribute on the L2TP RADIUS Accounting Policy (Create) form. L2TP RADIUS accounting policy attributes pertaining to the RADIUS Accounting Server have been moved to the RADIUS Servers tab.	<i>5620 SAM User Guide</i>	Procedure 50-3

(5 of 5)

Service management enhancements

The following table lists service management enhancement features for this release of the 5620 SAM.

Table 4-39 Service management enhancements

Feature ID	Feature or function	Description	Book	See
SAM-9942	IPsec gateway remote user and remote user security association	The IPsec gateway form on IES and VPRN L3 access interfaces includes information about the current remote users and remote user security associations.	<i>5620 SAM User Guide</i>	Procedure 31-12
SAM-12929	MT-ISIS for multicast routing	The 5620 SAM supports configuring MT-ISIS multicast parameters on base routing instances and routing instances in VPRN services.	<i>5620 SAM User Guide</i>	Procedures 24-20 and 24-23
SAM-13154	IKEv2 remote access tunnel support	The 5620 SAM supports the following policies for enabling RADIUS-based remote access tunnels: <ul style="list-style-type: none"> • RADIUS authentication policies • RADIUS accounting policies <p>The Match Peer ID to Certificate parameter is added to the IKE policy. The PSK RADIUS and Certificate RADIUS options are supported for the Authorization Method parameter on the IKE policy.</p> <p>You can assign the RADIUS authentication and accounting policies to an IPsec gateway on an IES or VPRN.</p>	<i>5620 SAM User Guide</i>	Procedures 31-1, 31-6, 31-7, and 31-11
SAM-21711	L2TPv3 service tunnels	L2TPv3 tunnels transport L2 Ethernet frames across an IPv6 environment. L2TPv3 provides Ethernet pseudowire-like services without using MPLS encapsulation or labels. Discrete source and destination IPv6 addresses are configured on the NE, rather than tunnel session or service labels. You can bind L2TPv3 service tunnels to Epipe spoke SDP bindings and mirror SDP bindings.	<i>5620 SAM User Guide</i>	Section 29.5 Procedures 29-2, 68-5, 70-2, and 70-3

(1 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-26333	G.8032 Ethernet ring CAC	The 5620 SAM includes G.8032 Ethernet rings in path searches when checking service tunnel bandwidth requirements.	<i>5620 SAM User Guide</i>	Section 62.1
	Ethernet ring connection	You can use the 5620 SAM to search for and connect an Ethernet ring to a VPLS service. Connecting an Ethernet ring adds the sites in the ring to the VPLS service, then creates SAPs and paths for the ring in the service.	<i>5620 SAM User Guide</i>	Procedure 69-24
SAM-27979	MPLS-TP—Static-to-dynamic PW stitching	The 5620 SAM supports the stitching of static MPLS-TP PWs to T-LDP signaled PWs (LDP, RSV, and BGP MPLS tunnels) on Epipe, Apipe, and Cpipe VLL switching sites. You can stitch static spoke SDP bindings to dynamic spoke SDP bindings on NEs that are release 12.0 R1 and later. On NEs that are release 11.0 and earlier, only static PW-to-static PW switching is supported. The VCCV ping and VCCV trace diagnostic tests are enhanced to support end-to-end OAM between static and dynamic segments.	<i>5620 SAM User Guide</i>	Chapter 28 Procedures 81-13, 81-14, 81-16 and 81-17
SAM-28070	LI confidentiality enhancements — L3 filters IPv4 and IPv6	The 5620 SAM supports the reservation of a block of filter entries in a base IPv4/IPv6 filter to use for LI. An LI user can create an IPv4 or IPv6 filter and configure LI filter entries. The filter entries are introduced into the reserved block of the base IPv4/IPv6 filter. A mirror service can use the LI IPv4 and IPv6 filter entries as LI source filters.	<i>5620 SAM User Guide</i>	Chapter 30 Procedures 30-11, 30-9, 30-10, 30-14, and 30-16
SAM-28054	LAG hash improvements—TEID hashing for LAG/ECMP	The 5620 SAM supports the configuration of TEID load balancing to improve the hashing algorithm in order to achieve more efficient load balancing. You can configure TEID load balancing: <ul style="list-style-type: none"> • on base network interfaces • on access interfaces of VPRN and IES services • on network interface of VPRN services You can configure the Ethernet Encapsulated IP option for the LSR IP Load Balancing parameter: <ul style="list-style-type: none"> • on base network interfaces • on network interface of VPRN services • on the load balancing configuration of an NE 	<i>5620 SAM User Guide</i>	Procedures 14-7, 23-9, 23-10, 71-22, 72-22, and 72-52
SAM-28077	Virtualized management for vCPE applications	In a VPRN service, you can configure multiple read-only and read-write SNMP communities for virtualized management functions that are part of a vCPE application.	<i>5620 SAM User Guide</i>	Procedures 72-4 and 72-9
SAM-28164	TCP-MSS static setting configuration	The 5620 SAM supports configuring a static TCP maximum segment size on a network interface.	<i>5620 SAM User Guide</i>	Procedure 23-9, 71-22, and 72-22

(2 of 4)

Feature ID	Feature or function	Description	Book	See
SAM-28166	Advertise router OSPF capability	The 5620 SAM supports configuring OSPF sites, areas, and interfaces to advertise router capabilities.	<i>5620 SAM User Guide</i>	Procedures 24-25, 24-27, 24-30, and 24-31
SAM-28176	OSPF overload max metric advertise for external type 2 LSA	The 5620 SAM supports enabling Overload External Metric-Type 2 on OSPFv2 and OSPFv3 sites in base routers and VPRN services.	<i>5620 SAM User Guide</i>	Procedure 24-30
SAM-28186	Generate ICMP messages for black hole routes	The 5620 SAM supports enabling a static or aggregate route to generate ICMP Unreachable messages, when configured to use a black hole as the next hop.	<i>5620 SAM User Guide</i>	Procedures 23-1, 23-13, 72-12, and 72-21
SAM-28196	Route table for labeled IP routes	The 5620 SAM supports configuring a BGP site to use the route table to resolve the BGP next hop of labeled-IP routes.	<i>5620 SAM User Guide</i>	Procedure 24-2
SAM-28230	MVPN redundant sources	The 5620 SAM supports configuring multiple redundant multicast sources for MPVN on PIM sites in VPRN services, and configuring the BGP MVPN route type using a routing policy.	<i>5620 SAM User Guide</i>	Procedures 24-42 and 23-15
SAM-28236	MVPN source address	The 5620 SAM supports configuring a PIM site to allow GRE-encapsulated Rosen MVPN traffic to originate from a configured IP address, instead of the system address.	<i>5620 SAM User Guide</i>	Procedure 24-42
SAM-28242	IPv6 Secure Neighbor Discovery	The 5620 SAM supports configuring IPv6 secure neighbor discovery on L3 network interfaces, and L3 interfaces in IES and VPRN services.	<i>5620 SAM User Guide</i>	Procedures 23-9, 23-10, 71-44, and 72-44
SAM-28282	Auto-BW RSVP-LSP optimization	The 5620 SAM supports configuring an MPLS instance to signal an LSP using the same hops as its current path.	<i>5620 SAM User Guide</i>	Procedure 27-2
SAM-28284	Underflow-triggered bandwidth adjustment	The 5620 SAM supports configuring a dynamic LSP to reduce bandwidth automatically when traffic flow drops below the configured threshold.	<i>5620 SAM User Guide</i>	Procedure 27-9
SAM-28286	Statistics for P2MP RSVP LSPs	The 5620 SAM supports collecting ingress and egress statistics for P2MP RSVP LSPs. Ingress statistics collection is configured on MPLS instances, and egress statistics collection is configured on P2MP LSPs and MVPN LSP templates.	<i>5620 SAM User Guide</i>	Procedures 27-2, 27-13, and 27-23
SAM-28300	DSMAP parameters for MPLS-TP	The 5620 SAM supports configuring DSMAP parameters on MPLS-TP interfaces, TP-LSP paths, and LSR paths.	<i>5620 SAM User Guide</i>	Procedures 27-3, 28-6, and 28-7
SAM-28308	BGP multi-homing for I-VPLS	The 5620 SAM supports configuring BGP multi-homing in an I-VPLS service.	<i>5620 SAM User Guide</i>	Procedure 69-61
SAM-28310	Redundant pseudo-wires in PBB domains	The 5620 SAM supports using an SDP to configure a redundant pseudo-wire. B-MAC parameters are configured on SDPs and spoke SDP bindings in Epipe services.	<i>5620 SAM User Guide</i>	Procedures 29-1 and 68-4
SAM-28312	Provider tunnels on BGP VPLS sites	The 5620 SAM supports configuring a provider tunnel on a VPLS site with either BGP-VPLS or BGP-AD configured.	<i>5620 SAM User Guide</i>	Procedure 69-12

(3 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28314	BFD interface binding for operational groups	The 5620 SAM supports binding a BFD interface to an operational group.	<i>5620 SAM User Guide</i>	Procedure 14-4
SAM-28316	Export inactive BGP routes	The 5620 SAM supports configuring a VPRN site to export the best BGP route learned by the site as a VPN-IP route even when that route is inactive.	<i>5620 SAM User Guide</i>	Procedure 72-9
SAM-28318	ISIS on VPRN routing instances	The 5620 SAM supports configuring ISIS sites and interfaces in a VPRN service.	<i>5620 SAM User Guide</i>	Procedures 24-20 and 72-54
SAM-28320	Spoke routing instances in VPRN services	The 5620 SAM supports configuring spoke-type routing instances in a VPRN service. The Spoke option is available under the Type parameter for routing instances.	<i>5620 SAM User Guide</i>	Procedure 72-9
SAM-28324	Unrestricted VRRP policy usage	VRRP policies can be used by multiple VRRP instances, regardless of the service context of the policy.	<i>5620 SAM User Guide</i>	Chapter 48
SAM-28326	VPRN auto-bind MPLS-GRE support	The 5620 SAM supports the VPRN auto-bind option to allow either an MPLS tunnel or a GRE tunnel to resolve the next-hop of imported VPN-IP routes.	<i>5620 SAM User Guide</i>	Procedure 72-60
SAM-28340	DHCPv6 support 32K dual stack hosts with numbered WAN per IMM/IOM	The parameter PD Managed Route is supported on the DHCPv6 form on an IES or VPRN group interface. The read-only parameter Managed Route Status is supported on the DHCP Lease State form.	<i>5620 SAM User Guide</i>	Procedures 66-16, 71-16, and 72-69
SAM-28354	IPv6-only ESM host	Enhancements for IES and VPRN group interface IPv6 configuration: <ul style="list-style-type: none"> • Allow Multiple WAN Address option • IPv6 router solicit configuration • Force Multicast option on IPv6 router advertisement • Override SLAAC option on DHCPv6 	<i>5620 SAM User Guide</i>	Procedures 71-16 and 72-69
SAM-28372	Local pool management for SLAAC IP prefix assignment	Configurable IPoE SLAAC IPv6 address assignment option on VPRN and IES group interface. IPv6 SLAAC prefix pool configuration on local user database IPoE host and PPP host.	<i>5620 SAM User Guide</i>	Procedures 71-16, 72-69, and 66-5
SAM-29549	Disable automatic tunnel creation	The 5620 SAM supports disabling automatic tunnel creation for tunnel selection profiles.	<i>5620 SAM User Guide</i>	Procedure 29-4
SAM-29553	Deleting multiple objects on the service topology map	The 5620 SAM supports deleting multiple objects on the service topology map simultaneously by selecting the objects and then performing the Delete operation.	<i>5620 SAM User Guide</i>	Chapter 7
SAM-31048	IPsec traffic selector	You can create IPsec traffic selector lists to restrict certain types of traffic that use an IPsec tunnel.	<i>5620 SAM User Guide</i>	Procedures 31-8 and 31-11
SAM-34699	IPSec VPN manager	The Manage IPsec VPN form, used to create IPsec VPNs and list IPsec tunnels and gateways in the network, is accessed using the Manage→IPsec menu option.	<i>5620 SAM User Guide</i>	Procedure 31-14

(4 of 4)

5780 DSC enhancements

The following table lists 5780 DSC enhancement features for this release of the 5620 SAM.

Table 4-40 5780 DSC enhancements

Feature ID	Feature or function	Description	Book	See
SAM-31473	5620 SAM support for the DSC-DCP product	The 5620 SAM supports discovery and management of the 5780 DSC DCP.	<i>5620 SAM LTEePC User Guide</i>	—

7210 SAS enhancements

The following table lists 7210 SAS enhancement features for this release of the 5620 SAM.

Table 4-41 7210 SAS enhancements

Feature ID	Feature or function	Description	Book	See
7210 SAS-D enhancements				
SAM-23893	ITU-T Y.1564 test-head support for 7210 SAS nodes (enhancements)	5620 SAM support for Y.1564 bidirectional tests is extended to include VPLS and additional test types. These enhancements are supported on the 7210 SAS-D, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Section 80.6
SAM-23399	NTP support on 7210 SAS nodes	The 5620 SAM supports the configuration of NTP on the 7210 SAS-D, Release 5.0 R1 or later. NTP Multicast is not supported.	<i>5620 SAM User Guide</i>	Procedure 16-12
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	NE software upgrade policies support an option to perform a reboot upgrade. The reboot upgrade function upgrades the system firmware when the NE reboots. The option is supported for a Release 4.0 R1 or later 7210 SAS-D.	<i>5620 SAM System Administrator Guide</i>	"Managing NE software upgrades" and Procedure "To create a software upgrade policy"
SAM-32595	Up-MEP state independence in a VLL Epipe service	The 5620 SAM supports holding a VLL Epipe service in the up operational state when a SAP on the service is down. Support for this feature is extended to the 7210 SAS-D, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Procedure 68-32
SAM-32599	Y.1564 test-head profile support with PIR	5620 SAM support for Y.1564 test-head profiles is enhanced to include PIR and additional acceptance criteria for the 7210 SAS-D, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Section 80.6
SAM-32601	VLAN Range in VPLS	The 5620 SAM supports VLAN range SAPs for VPLS on the 7210 SAS-D, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Section 55.1 Procedure 69-25

(1 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-32605	Dry contacts using the console port on the 7210 SAS-D	The 5620 SAM supports the configuration of dry contact alarm sensors using the console port on the 7210 SAS-D and 7210 SAS-D ETR, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Procedure 16-3
7210 SAS-E enhancements				
SAM-23399	NTP support on 7210 SAS nodes	The 5620 SAM supports the configuration of NTP on the 7210 SAS-E, Release 5.0 R1 or later. NTP Multicast is not supported.	<i>5620 SAM User Guide</i>	Procedure 16-12
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	NE software upgrade policies support an option to perform a reboot upgrade. The reboot upgrade function upgrades the system firmware when the NE reboots. The option is supported for a Release 4.0 R1 or later 7210 SAS-E.	<i>5620 SAM System Administrator Guide</i>	“Managing NE software upgrades” and Procedure “To create a software upgrade policy”
7210 SAS-M enhancements				
—	Access ingress meter overrides for L3 access interfaces	The 5620 SAM supports access ingress policy overrides for meters on L3 access interfaces on the 7210 SAS-M (in network mode), Release 6.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 44-44
SAM-23399	NTP support on 7210 SAS nodes	The 5620 SAM supports the configuration of NTP on the 7210 SAS-M, Release 5.0 R1 or later. NTP Multicast is not supported.	<i>5620 SAM User Guide</i>	Procedure 16-12
SAM-23576	SDP mirroring support on 7210 SAS nodes	The 5620 SAM supports mirror SDP bindings on 7210 SAS-M destination sites. This feature is supported on the 7210 SAS-M (in network mode), Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 70-2
SAM-23893	ITU-T Y.1564 test-head support for 7210 SAS nodes (enhancements)	5620 SAM support for Y.1564 bidirectional tests is extended to include VPLS and additional test types. These enhancements are supported on the 7210 SAS-M, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Section 80.6
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	NE software upgrade policies support an option to perform a reboot upgrade. The reboot upgrade function upgrades the system firmware when the NE reboots. The option is supported for a Release 4.0 R1 or later 7210 SAS-M.	<i>5620 SAM System Administrator Guide</i>	“Managing NE software upgrades” and Procedure “To create a software upgrade policy”
SAM-32595	Up-MEP state independence in a VLL Epipe service	The 5620 SAM supports holding a VLL Epipe service in the up operational state when a SAP on the service is down. Support for this feature is extended to the 7210 SAS-M, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Procedure 68-32
SAM-32599	Y.1564 test-head profile support with PIR	5620 SAM support for Y.1564 test-head profiles is enhanced to include PIR and additional acceptance criteria for the 7210 SAS-M, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Section 80.6
SAM-32601	VLAN Range in VPLS	The 5620 SAM supports VLAN range SAPs for VPLS on the 7210 SAS-M (in access-uplink mode), Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Section 55.1 Procedure 69-25
7210 SAS-R enhancements				

(2 of 4)

Feature ID	Feature or function	Description	Book	See
—	Access ingress meter overrides for L3 access interfaces	The 5620 SAM supports access ingress policy overrides for meters on L3 access interfaces on the 7210 SAS-R, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 44-44
SAM-23399	NTP support on 7210 SAS nodes	The 5620 SAM supports the configuration of NTP on the 7210 SAS-R, Release 6.1 R1 or later. NTP Multicast is not supported.	<i>5620 SAM User Guide</i>	Procedure 16-12
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	NE software upgrade policies support an option to perform a reboot upgrade. The reboot upgrade function upgrades the system firmware when the NE reboots. The option is supported for a Release 6.1 R1 or later 7210 SAS-R.	<i>5620 SAM System Administrator Guide</i>	"Managing NE software upgrades" and Procedure "To create a software upgrade policy"
SAM-32589	MPLS-TP on the 7210 SAS-R	The 5620 SAM supports the configuration of MPLS-TP on routing instances on the 7210 SAS-R, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Section 28.1
SAM-32591	System resource profile policy for the 7210 SAS-R	The 5620 SAM supports the configuration of up to 16 system resource profile policies for resource allocation on the 7210 SAS-R, Release 6.1 R1 or later. The policy is assigned to the IO card slot for the device.	<i>5620 SAM User Guide</i>	Procedure 14-22
7210 SAS-T enhancements				
SAM-23399	NTP support on 7210 SAS nodes	The 5620 SAM supports the configuration of NTP on the 7210 SAS-T, Release 6.0 R3 or later. NTP Multicast is not supported.	<i>5620 SAM User Guide</i>	Procedure 16-12
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	NE software upgrade policies support an option to perform a reboot upgrade. The reboot upgrade function upgrades the system firmware when the NE reboots. The option is supported for a Release 6.0 R3 or later 7210 SAS-T.	<i>5620 SAM System Administrator Guide</i>	"Managing NE software upgrades" and Procedure "To create a software upgrade policy"
SAM-31880	IEEE 1588v2 PTP support for the 7210 SAS-T	The 5620 SAM supports PTP timing synchronization for the 7210 SAS-T and 7210 SAS-T ETR, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Procedures 16-17 and 16-18
SAM-32593	Y.1564 test-head support for the 7210 SAS-T	The 5620 SAM supports Y.1564 bidirectional tests on the 7210 SAS-T, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Section 80.6
SAM-32595	Up-MEP state independence in a VLL Epipe service	The 5620 SAM supports holding a VLL Epipe service in the up operational state when a SAP on the service is down. Support for this feature is extended to the 7210 SAS-T, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Procedure 68-32
SAM-32601	VLAN Range in VPLS	The 5620 SAM supports VLAN range SAPs for VPLS on the 7210 SAS-T, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Section 55.1 Procedure 69-25
7210 SAS-X enhancements				
—	Access ingress queue and meter overrides for L3 access interfaces	The 5620 SAM supports access ingress policy overrides for queues and meters on L3 access interfaces on the 7210 SAS-X, Release 6.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 44-44 and 44-45

(3 of 4)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-23399	NTP support on 7210 SAS nodes	The 5620 SAM supports the configuration of NTP on the 7210 SAS-X, Release 5.0 R1 or later. NTP Multicast is not supported.	<i>5620 SAM User Guide</i>	Procedure 16-12
SAM-23576	SDP mirroring support on 7210 SAS nodes	The 5620 SAM supports mirror SDP bindings on 7210 SAS-X destination sites. This feature is supported on the 7210 SAS-X, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 70-2
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	NE software upgrade policies support an option to perform a reboot upgrade. The reboot upgrade function upgrades the system firmware when the NE reboots. The option is supported for a Release 4.0 R1 or later 7210 SAS-X.	<i>5620 SAM System Administrator Guide</i>	"Managing NE software upgrades" and Procedure "To create a software upgrade policy" in the <i>5620 SAM System Administrator Guide</i>
SAM-32595	Up-MEP state independence in a VLL Epipe service	The 5620 SAM supports holding a VLL Epipe service in the up operational state when a SAP on the service is down. Support for this feature is extended to the 7210 SAS-X, Release 6.0 R5 or later.	<i>5620 SAM User Guide</i>	Procedure 68-32

(4 of 4)

7450 ESS and 7750 SR enhancements

The following table lists 7450 ESS and 7750 SR enhancement features for this release of the 5620 SAM.

Table 4-42 7450 ESS and 7750 SR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-27645	AC rectifier failure indicator	The 5620 SAM supports displaying AC rectifier failures in the Power Supply Tray configuration form. The AC Rectifier Failed/Missing parameter is updated when an AC rectifier fails or is removed.	<i>5620 SAM User Guide</i>	Section 16.2
SAM-28064	Larscom subrate CSU mode	The 5620 SAM supports configuring a DS3 channel that uses the Larscom DS3 subrate protocol.	<i>5620 SAM User Guide</i>	Procedure 17-35
SAM-28072	SAP instance optimization for LAG	The 5620 SAM supports configuring a LAG to use one SAP per flex path when both ingress and egress forwarding path queues are enabled.	<i>5620 SAM User Guide</i>	Procedure 15-10 and 15-11
SAM-28081	Memory and utilization statistics on standby cards	The 5620 SAM supports collecting CPU and memory usage statistics for standby CPM and IOM cards on 7450 ESS, 7750 SR, and 7950 XRS nodes. This feature is not supported on 7750 SR-c12 nodes.	<i>5620 SAM Statistics Management Guide</i>	—

(1 of 2)

Feature ID	Feature or function	Description	Book	See
SAM-28085	Reboot hold for standby SF and CPM modules.	The 5620 SAM supports performing the Reboot Hold command on standby SF and CPM modules in 7450 ESS and 7750 SR nodes, Release 12.0 R1 or later. The Reboot Hold command instructs the module to shut down gracefully, and remain shut down until rebooted again.	<i>5620 SAM User Guide</i>	Section 6.1
SAM-28836	Advertise LDP Prefix for 7450 ESS	The 5620 SAM supports configuring the Advertise LDP Prefix parameter for BGP peers on 7450 ESS nodes in non-mixed mode, Release 12.0 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 24-5
SAM-30129	Shut down MDA when an XPL error occurs	The 5620 SAM supports configuring an ATM or POS MDA to shut down when an XPL error occurs.	<i>5620 SAM User Guide</i>	Procedure 16-38
SAM-33045 SAM-33077 SAM-33079 SAM-33082 SAM-33084 SAM-33086	New card support	The 5620 SAM supports provisioning the following cards on the 7750 SR: <ul style="list-style-type: none"> • IOM3 XP C • 1-port 10GE HSMDA Additionally, the 5620 SAM supports provisioning the following cards on 7750 SR-12E nodes. <ul style="list-style-type: none"> • CPM / Switch Fabric 5 E • 40-port 10GE SFP+ IMM • 4-port 100GE CXP IMM 	<i>5620 SAM User Guide</i>	Chapter 16
SAM-35745	ISA2 card support	The 5620 SAM supports provisioning ISA2 Tunnel daughter cards in 1PAC FP3 and 2PAC FP3 IMMs on 7750 SR nodes, Release 12.0 R1. Ports on ISA2 cards can be added to ISA tunnel groups.	<i>5620 SAM User Guide</i>	Procedure 15-5 Chapter 16

(2 of 2)

7705 SAR enhancements

The following table lists 7705 SAR enhancement features for this release of the 5620 SAM.

Table 4-43 7705 SAR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-20715	7705 SAR-M 2p 10G ring module	The 5620 SAM supports the 2 × 10-Gig Bridged Ethernet XFP + 1 × 2.5G Virtual Ethernet card on a 7705 SAR-M ASAP and 7705 SAR-M with fan variants, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Section 9.9
SAM-20717	ISC (with SCADA)	The 5620 SAM supports an ISC and the configuration of SCADA on the 7705 SAR-8 and 7705 SAR-18, Release 6.1 R1 or later. You can add SCADA branches as SAPs on an L2 access interface on a Cpipe or Epipe service site.	<i>5620 SAM User Guide</i>	Sections 9.9 and 16.2 Procedures 16-13 and 68-32

(1 of 5)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-20727 SAM-25928 SAM-25930 SAM-25932 SAM-25934 SAM-25936	7705 SAR-Wx support	<p>The 5620 SAM supports the discovery and management of the 7705 SAR-Wx. The following 7705 SAR-Wx variants are supported:</p> <p>Release 6.1 R2 or later:</p> <ul style="list-style-type: none"> • 5 GigE <p>Release 6.1 R3 or later:</p> <ul style="list-style-type: none"> • 4 GigE 4-port xDSL • 5 GigE PoE+ • 5 GigE PoE+ GPS Rx <p>Release 6.1 R4 or later:</p> <ul style="list-style-type: none"> • 4 GigE 4-port xDSL GPS Rx • 5 GigE GPS Rx <p>The following network management functions and services are supported:</p> <ul style="list-style-type: none"> • NTP • IEEE 1588-2008 PTP timing synchronization • PoE • backup and restore • software upgrade • IPv6 • SNMPv3 • routing • VLL (Cpipe, Epipe, Ipipe only) • IES • VPRN • VPLS, MVPLS • OAM/CFM • QoS policies • DHCP 	<i>5620 SAM User Guide</i>	Section 9.9 Procedures 17-1, 17-20, and 17-21
SAM-22683	Q in Q on SAP access	<p>The 5620 SAM supports the configuration of Q in Q encapsulation on an Ethernet port and on a LAG, on the 7705 SAR, Release 6.1 R1 or later. Q in Q access SAP is supported on the following services:</p> <ul style="list-style-type: none"> • VLL Epipe and Ipipe • VPLS and MVPLS • IES • VPRN <p>Transit SAPs (encapsulation type *.*) are supported on Epipe and VPLS services only.</p>	<i>5620 SAM User Guide</i>	Section 29.3 Procedures 15-10, 17-1, 68-32, 69-25, 71-22, and 72-22
SAM-28530	IP ECMP	The 5620 SAM supports L4 load balancing on a network interface, routing instance interface, and IES/VPRN L3 access interface, on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 14-7, 23-9, 71-22, and 72-22
SAM-28532	Jumbo frames (9 Kb)	The 5620 SAM supports jumbo frames on all Ethernet capable ports on the 7705 SAR, Release 6.1 R2 or later.	<i>5620 SAM User Guide</i>	Procedure 17-1

(2 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-28534	Y.1731 MEP on network ports	The 5620 SAM supports the configuration of Y.1731 CFM Ethernet tests on network ports on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Chapter 81 Workflow 80.6
SAM-28538	Hybrid ports	The 5620 SAM supports hybrid mode when you configure Ethernet ports on the 7705 SAR (except the 7705 SAR-F) Release 6.1 R2 or later.	<i>5620 SAM User Guide</i>	Section 17.2 Procedure 17-1
SAM-28540 SAM-30557	RFC 3107 Inter-Area PW at L2 and L3	The 5620 SAM supports the following configurations on the 7705 SAR, Release 6.1 R1 or later: <ul style="list-style-type: none"> transport tunnel options LDP, MPLS and RSVP-TE on a routing instance on a BGP site BGP transport tunnel option on an MPLS dynamic LSP enabling of a BGP tunnel during the creation of an IP/MPLS service tunnel Inter-Area PW at L3 is supported on the 7705 SAR, Release 6.1 R2 or later.	<i>5620 SAM User Guide</i>	Procedures 24-2, 27-8, 29-1
SAM-28544	Static LAG	The 5620 SAM supports the configuration of a static LAG on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 15-10
SAM-28546	Routed NAT/PAT support	The 5620 SAM supports the configuration of the following security policies on the 7705 SAR-8 with CSMv2, 7705 SAR-8v2 with CSMv2, 7705 SAR-18, 7705 SAR-H, 7705 SAR-Hc, and 7705 SAR-Wx, Release 6.1 R1 or later: <ul style="list-style-type: none"> security profile policy security policy security zone policy 	<i>5620 SAM User Guide</i>	Chapter 61 Section 43.1 Procedures 14-26, 23-10, 71-34, and 72-32 Procedure "To configure 5620 SAM system preferences" in the <i>5620 SAM System Administrator Guide</i>
SAM-28548	DHCP server	The 5620 SAM supports the following DHCP enhancements on the 7705 SAR, Release 6.1 R1 or later: <ul style="list-style-type: none"> standalone DHCP server DHCP server on routing network interface, IES L3 access interface, and VPRN L3 access interface DHCP relay DHCP client DHCP for IPv4 configurable GI address configurable Use Pool From Client 	<i>5620 SAM User Guide</i>	Procedures 23-2, 23-9, 71-31, 71-45, 72-14, 72-35, 72-45

(3 of 5)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-28550	IPsec support	The 5620 SAM supports the configuration of IPsec on an IES or VPRN service on the 7705 SAR, Release 6.1 R2 or later. You can configure a static route on a VPRN site, and a public tunnel as a SAP on an IES L3 access interface. Tunnel interface configuration is only supported on a VPRN service. Tunnel group members or tunnel templates are not supported.	<i>5620 SAM User Guide</i>	Procedures 15-5, 31-1, 31-2, 31-5, 31-9, 31-10, 71-22, 72-12
SAM-28554	MFC using ACL	The 5620 SAM supports the forwarding class option when configuring an ACL IP filter entry on the 7705 SAR, Release 6.1 R2 or later.	<i>5620 SAM User Guide</i>	Procedure 45-2
SAM-30554	GPS receiver module	The 5620 SAM supports a GPS receiver module on the 7705 SAR-H and 7705 SAR-Wx, Release 6.1 R3 or later.	<i>5620 SAM User Guide</i>	Section 9.9
SAM-30575	7705 SAR-Hc support	The 5620 SAM supports the discovery and management of the 7705 SAR-Hc, Release 6.1 R1 or later. The following network management functions and services are supported: <ul style="list-style-type: none"> • NTP • IEEE 1588-2008 PTP timing synchronization • PoE • backup and restore • software upgrade • IPv6 • SNMPv3 • routing • VLL (Cpipe, Epipe, Ipipe only) • IES • VPRN • VPLS • OAM/CFM • QoS policies • DHCP 	<i>5620 SAM User Guide</i>	Section 9.9 Procedure 16-12
SAM-31230	DCR 613155 TTL security	The 5620 SAM supports TTL security on a BGP peer group on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedure 24-4
SAM-31232	Proxy ARP	The 5620 SAM supports the configuration of proxy ARP for network IP interfaces and IES/VPRN L3 access interfaces on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 23-9, 71-43, and 72-43
SAM-31419	7705 SAR-H migration	The 7705 SAR-H is supported in Release 6.1 R1, with the following changes: <ul style="list-style-type: none"> • Chapter 60 firewall support and configuration is only applicable to the 7705 SAR-H, Release 5.0. • PoE power supply configuration is moved from the shelf properties to the daughter card properties. For the 7705 SAR-H Release 5.0, the power supply configuration is on the shelf properties. 	<i>5620 SAM User Guide</i>	Procedure 17-20

(4 of 5)

Feature ID	Feature or function	Description	Book	See
SAM-31471	Software upgrade policy enhancements to support reboot upgrade	The 5620 SAM allows you to enable an automatic firmware upgrade as part of the software upgrade policy on the 7705 SAR, Release 6.0 R1 or later.	<i>5620 SAM System Administrator Guide</i>	“Managing NE software upgrades” and Procedure “To create a software upgrade policy”
SAM-31739	TEID load balancing	The 5620 SAM supports TEID load balancing on a routing interface and IES/VPRN L3 access interface on the 7705 SAR, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	Procedures 23-9, 23-10, 71-22, and 72-22
SAM-31745	In-band management VRF	The 5620 SAM supports the configuration of a global route table on a VPRN site on the 7705 SAR, Release 6.0 R3 or later.	<i>5620 SAM User Guide</i>	Procedure 72-57
SAM-39762	PoE power menu	The 5620 SAM displays the Maximum Power (watts) and Power In Use (watts) values for the PoE port on the 7705 SAR-H, 7705 SAR-Hc, 7705 SAR-W, and 7705 SAR-Wx, Release 6.1 R1 or later.	<i>5620 SAM User Guide</i>	—

(5 of 5)

7950 XRS enhancements

The following table lists 7950 XRS enhancement features for this release of the 5620 SAM.

Table 4-44 7950 XRS enhancements

Feature ID	Feature or function	Description	Book	See
SAM-28344	Increased maximum values for ESM session limit attributes.	<p>The maximum configurable values for some ESM session limit attributes have been increased, allowing for up to 64000 subscribers per MDA and 256000 subscribers per NE.</p> <p>The following attributes now support a maximum value of 65535 (or, for attributes on retail interfaces, 262143).</p> <ul style="list-style-type: none"> • ARP Host Limit • Enable Lease Populate • Host Limit • Lease Populate • SAP ARP Host Limit • Session Limit • Session Limit per SAP • Subscriber Limit 	<i>5620 SAM User Guide</i>	—

(1 of 2)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-30248	7950 XRS power shedding improvements	The 5620 SAM supports provisioning APEQ DC 2000 devices on 7950 XRS nodes. Additional information about power management zones, available wattage, and input feed status is displayed on power supply tray forms. Power utilization and requirement information on power management zone configuration forms appears in a single Utilization and Requirements tab.	<i>5620 SAM User Guide</i>	Procedures 16-24 and 16-25
SAM-31859	7950 XRS-20 support	The CPM slot numbers for 7950 XRS-20 nodes have changed to slots 21 and 22, and additional XCM, CCM, PEQ, and fans may be available.	<i>5620 SAM User Guide</i>	—

(2 of 2)

9500 MPR enhancements

The following table lists 9500 MPR enhancement features for this release of the 5620 SAM.

Table 4-45 9500 MPR enhancements

Feature ID	Feature or function	Description	Book	See
SAM-32530	EASv2 card support	The 5620 SAM supports EASv2 card configuration at EASv1 level.	<i>5620 SAM MPR User Guide</i>	Section 6.5
SAM-35024	NEtO distribution for 9500 MPR/9500 MPre 5.1.	The 5620 SAM supports NEtO distribution for the 5.1 node version of the 9500 MPR and 9500 MPre, in addition to the 5.0, 4.2, 4.1, and 4.0 releases for 9500 MPR and the 5.0, 4.2, and 4.1 releases for 9500 MPre.	<i>5620 SAM MPR User Guide</i>	—

7750 MG enhancements

The following table lists 7750 MG enhancement features for this release of the 5620 SAM.

Table 4-46 7750 MG enhancements

Feature ID	Feature or function	Description	Book	See
—	7750 MG Release 6.0 R1	The 5620 SAM supports the discovery and management of the 7750 MG Release 6.0 R1.	<i>5620 SAM LTEePC User Guide</i>	—

(1 of 6)

Feature ID	Feature or function	Description	Book	See
SAM-20956	Diameter over SCTP	The 5620 SAM supports local and remote multi-homing by supporting multiple IP addresses between SCTP endpoints.	<i>5620 SAM LTEePC User Guide</i>	Sections 19.1 and 19.2 Procedures 19-13, 19-45, and 19-46
SAM-22147	Combined SGW and PGW application on the same 7750 MG ISM mobile card in a single chassis	The 5620 SAM supports bearer traffic on the combined SGW/PGW, as well as S1-U, S4, S11, and S12 reference points.	<i>5620 SAM LTEePC User Guide</i>	Sections 1.1, 6.1, 17.1, 17.3, 19.1, and 19.2 Procedures 6-10, 6-11, 17-1, and 19-16
		The 5620 SAM supports the PDN Session Type statistics counter, which is a PGW PDN context data counter and a PGW bearer context data counter.	<i>5620 SAM LTEePC User Guide</i>	Chapter 23
		The 5620 SAM supports new PGW bearer context data statistics counters: <ul style="list-style-type: none"> • Pdn Session Type • Qos Uplink • Maximum Bit Rate • Qos Downlink • Maximum Bit Rate • Qos Uplink • Guaranteed Bit Rate • Qos Downlink • Guaranteed Bit Rate • S1u EnodeB TEID • S1u EnodeB Address • S1u SGW TEID • S1u SGW Address • S11 Qos Modifications • S1u Downlink Packets • S1u Downlink Bytes • S5 or S2a Uplink Packets • S5 or S2a Uplink Bytes 	<i>5620 SAM LTEePC User Guide</i>	Chapter 23
		The 5620 SAM supports new ISM-MG PGW call flow procedure statistics counters: <ul style="list-style-type: none"> • S2b To S2b Handover Success • S2b To S2b Handover Failure • S2b To 3G Handover Success • Inter HSGW Handover Failure • 3G To S2b Handover Success • 3G To S2b Handover Failure • HRPD Attach Success • HRPD Attach Failure • HRPD Detach Success • HRPD Detach Failure • Inter PDSN Handover Success • Inter PDSN Handover Failure 	<i>5620 SAM LTEePC User Guide</i>	Chapter 23

(2 of 6)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-22147	Combined SGW and PGW application on the same 7750 MG ISM mobile card in a single chassis	The 5620 SAM supports new ISM-MG PGW card statistics counters: <ul style="list-style-type: none"> • IPv4 Primary PDP Context • IPv6 Primary PDP Context • IPv4v6 Primary PDP Context • Primary PDP Context • Secondary PDP Context • Paging Inprogress • Buffers Allocated • Buffers Available • Buffers Alloc Error • ENBs • MMEs • UEs • Idle UEs • Suspended UEs • SGSNs • RNCs • Combined Bearers • Combined Default Bearers • Combined Dedicated Bearers • Combined Active Bearers • Combined Idle Bearers • Combined IPv4 Bearers • Combined IPv6 Bearers • Combined IPv4v6 Bearers • Combined PDN Sessions • Combined IPv4 PDN Sessions • Combined IPv6 PDN Sessions • Combined IPv4v6 PDN Sessions • IPv4 Home Agent Sessions • HRPD PDN Sessions 	<i>5620 SAM LTEePC User Guide</i>	Chapter 23
		The 5620 SAM supports the ability to view the failure code statistics and control peer statistics for S4, S5, S8, or S11 EPS peers.	<i>5620 SAM LTEePC User Guide</i>	Procedures 23-3 and 23-4
		The 5620 SAM supports the ability to view signaling paths and signaling path statistics on the SGW and PGW instances.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-1, 6-8, and 23-7
		The 5620 SAM supports EPS path topology changes.	<i>5620 SAM LTEePC User Guide</i>	Section 1.1
SAM-29919	NAT44	The 5620 SAM supports NAT44 with the same functionality as for the 7750 SR.	<i>5620 SAM User Guide</i>	—
SAM-29921	Destination IP address rewrite	The 5620 SAM supports the ability of the PGW/GGSN to rewrite the destination IP address of an MMS request so that the request is forwarded to a proxy gateway instead of to the original destination.	<i>5620 SAM LTEePC User Guide</i>	Section 19.1 Procedure 19-51

(3 of 6)

Feature ID	Feature or function	Description	Book	See
SAM-29925	Restoration call flow improvement	The 5620 SAM supports a UE inactivity timer on the PGW and SGW S11 reference point. If the path management session on the S11 reference point to a peer restarts without the peering node restarting, the timer detects the active status of a UE. If the UE is idle for a specified time after the path management session has restarted, the SGW deletes the PDN connection. Deleting the PDN connection removes sessions that are no longer valid because they have moved to an alternate SGW during an SGW restoration procedure executed on the 9471 WMM.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-3 and 6-10
SAM-29928	IP address reuse	The 5620 SAM supports the reservation and reuse of an IP address for the same PDN session after the session is re-created.	<i>5620 SAM LTEePC User Guide</i>	Section 6.5
SAM-29929	Multiple S5 and S8 interfaces in SGW or PGW to support roaming partners	The 5620 SAM supports the APN list profile, which is associated with multiple S5 interfaces. The profile provides dedicated routing resources between the SGW and PGW, and allows enhanced network resource management for each APN. Multiple S8 interfaces are also supported by configuring the PLMN list profile for each S8 interface.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-3, 6-10, 19-1, and 19-2 Section 19.1 Table 19-2
SAM-29935	Volume limit management for offline charging	The 5620 SAM supports volume limit management for offline charging. Excess usage is carried over to the next reporting level.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-6, 6-7, 6-13, and 6-15
SAM-29941	Gy online charging enhancements	The 5620 SAM supports Gy online charging enhancements, including the ability to: <ul style="list-style-type: none"> • suppress the delivery of USUs to any rating group that was not allocated any quota by the OCS • specify which CC parameters are included in the USUs that are sent to the OCS • deprecate the activity threshold that can be currently specified at the gateway level and move the activity threshold to the DCCA profile 	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-7
SAM-29943	DHCPv6 client	The 5620 SAM supports the ability to use a remote DHCPv6 server to assign an IP address.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-9
SAM-29947	PCRF-specified charging addresses	The 5620 SAM supports the following statistics counters on the Statistics Record—Gx Peer Stats form: <ul style="list-style-type: none"> • Primary OCS Addresses Received • Invalid Primary OCS Addresses Received • Invalid Secondary OCS Addresses Received • Secondary OCS Addresses Received 	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-2

(4 of 6)

4 — New features

Feature ID	Feature or function	Description	Book	See
SAM-29955	Selective DPI diversion	The 5620 SAM supports the ability to divert specific subscriber traffic to DPI for application processing.	<i>5620 SAM LTEePC User Guide</i>	Section 19.1 Procedure 19-39
SAM-29957	Redirection and tethering statistics enhancements	The 5620 SAM supports the following new statistics counters on the Statistics Record—PDN APN Stats and the Statistics Record—ISM-MG PGW Card Stats forms: <ul style="list-style-type: none"> • Redirected Sessions • Redirected Sessions Periodic • Tethered Sessions • Tethered Sessions Periodic 	<i>5620 SAM LTEePC User Guide</i>	Procedures 23-5 and 23-8
SAM-29959	ABS statistics and alarms	The 5620 SAM supports ABS statistics and alarms. The following statistics counters are supported on the Statistics Record — ISM-MG PGW Card Stats form: <ul style="list-style-type: none"> • No of ABS Dropped Requests • No of ABS Dropped Requests Periodic The following statistics counters are supported on the Statistics Record — ISM-MG SGW Card Stats form: <ul style="list-style-type: none"> • Serv Stat ABSDrpd Req • Serv Stat ABSDrpd Req Periodic 	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-8
SAM-31293	APN AMBR	The 5620 SAM supports the enhancement of the policy rule base definition with APN AMBR. The No Of APN AMBR Updates statistics counter is supported on the Statistics Record—PDN APN Stats form. The following statistics counters are supported on the User Stat Query (View) form: <ul style="list-style-type: none"> • Enforced Downlink APN AMBR • Enforced Uplink APN AMBR 	<i>5620 SAM LTEePC User Guide</i>	Procedures 19-37, 23-5, and 23-21
SAM-31360	Redirecting partial network failures and manual switchovers	The 5620 SAM supports the configuration of the mobile pre-slave state for a policy statement. The MC mobile group supports multichassis redirection.	<i>5620 SAM LTEePC User Guide</i>	Section 6.9 Procedure 6-22
SAM-31509	UE information in billing records	The 5620 SAM supports the inclusion of the User-Equipment-Info AVP in the ACR Interim and ACR Stop messages.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-3
SAM-32006	OAM tests on EPS peers	The 5620 SAM supports OAM tests on EPS peers.	<i>5620 SAM LTEePC User Guide</i>	Sections 24.1 and 24.2 Procedures 24-2 and 24-3
SAM-32012	Automated RCA audit enhancement	The 5620 SAM supports the automatic start of an RCA audit after a node upgrade and resynchronization are successful.	<i>5620 SAM LTEePC User Guide</i>	Section 13.1

(5 of 6)

Feature ID	Feature or function	Description	Book	See
SAM-33139	KPI/KCI statistics for usage of individual IP pool on the CPM	The 5620 SAM supports CPM KPI/KCI statistics that display IPv4 and IPv6 pool size and utilization in a VPRN.	<i>5620 SAM Alarm Reference</i>	
SAM-33141	PDN session	The 5620 SAM supports the retention of the current PDN session when there is a request for a new PDN session with the same IMSI and APN.	<i>5620 SAM LTEePC User Guide</i>	Procedures 6-1 and 6-8
SAM-33143	APN NI only in the called- station-ID AVP	The 5620 SAM supports sending only the APN NI in the call station ID AVP for Gy online charging.	<i>5620 SAM LTEePC User Guide</i>	Procedure 6-13
SAM-36725	Gy Enh back-to-back usage reporting	The 5620 SAM supports back-to-back usage reporting to notify the OCS of excess subscriber network usage.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-7
SAM-37026	Gy service limitation	The 5620 SAM supports a Gy service limitation.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-7
SAM-37373	PGW PDN context data enhancement	The 5620 SAM supports Gy accounting statistics, a PGW PDN context data enhancement.	<i>5620 SAM LTEePC User Guide</i>	Procedure 23-21
SAM-37421	Alarm log enhancement	The 5620 SAM supports the AGWGTTPMIPPeerLastRestartInfo alarm.	<i>5620 SAM Alarm Reference</i>	
SAM-37598	RCA audit includes added and deleted items	The 5620 SAM supports the display of: <ul style="list-style-type: none"> added items—entries that are not in the golden configuration snapshot, but are added to the node deleted items—entries that are in the golden configuration snapshot, but are deleted from the node 	<i>5620 SAM LTEePC User Guide</i>	Procedure 13-8

(6 of 6)

9471 WMM enhancements

The following table lists 9471 WMM enhancement features for this release of the 5620 SAM.

Table 4-47 9471 WMM enhancements

Feature ID	Feature or function	Description	Book	See
9471 WMM management enhancements				
SAM-33030	Force "PM Get All" for the WMM	The 5620 SAM supports a function to retrieve all PM counter files stored on 9471 WMM.	<i>5620 SAM LTEePC User Guide</i>	PM file retrieval Procedures 23-16 and 23-17

(1 of 3)

4 – New features

Feature ID	Feature or function	Description	Book	See
SAM-31943	Golden config snapshot enhancements	The 5620 SAM supports the following 9471 WMM golden configuration enhancements: <ul style="list-style-type: none"> “added” and “missing” objects are identified by golden configuration audits golden configuration audits can be automatically triggered following an NE software upgrade 	<i>5620 SAM LTEePC User Guide</i>	Chapter 12
SAM-31945	5620 SAM to differentiate between SGSN, MME, and combo type NEs	The 5620 SAM displays the NE configuration type, such as SGSN, MME, WMM, or SRS, in the navigation tree, topology map, and NE instance properties forms.	<i>5620 SAM LTEePC User Guide</i>	—
9471 WMM enhancements				
SAM-31422	Support for 9471 WMM Release 8.0.0	The 5620 SAM supports discovery and management of 9471 WMM Release 8.0.0.	<i>5620 SAM LTEePC User Guide</i>	—
SAM-31456 m11502-01	Support for N3 and T3 timers per GTP Message Type	This feature adds N3 and T3 timer parameters to the global and local WMM GTP profiles.	<i>5620 SAM LTEePC User Guide</i>	Procedure 19-59 for the global policy Procedure 8-89 for the local object
SAM-37133 m10132-02	SGSN support for Multiple Home PLMNs	You can configure Mhome type PLMNs on SGSN and combo 9471 WMMs.	<i>5620 SAM LTEePC User Guide</i>	Procedure 9-3
SAM-31432 m10534-04	WMM support for Alarm Strategy Enhancements	Link alarms are now capped at 100 per link type. Additional alarms are indicated by the singular <i>WmmLSS_excessiveExternalLinksDown</i> alarm.	<i>5620 SAM LTEePC User Guide</i>	—
SAM-31430 m10501-08	MME support for HSS initiated call trace	HSS can initiate call trace sessions when the “HSS Initiated Call Trace” global parameter is enabled. HSS-initiated call trace sessions have “hss” as the Call Trace Source in Call Trace Status objects.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116 for global parameters Procedure 25-5 to view Call Trace Status objects
SAM-31426 m10120-05	MME support for ULI enhancements	This feature adds the following: <ul style="list-style-type: none"> global parameters: <ul style="list-style-type: none"> ULI Home Routed UE Retrieve UE Location timer: S1 UE Location Report 	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116 for global parameters Procedure 8-117 for timers
SAM-2280 m10103-7	MME Support for SRV records for MME DNS support to discover MME/PGW/SGW/SGSN	This feature adds the Support DNS SRV global parameter.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116

(2 of 3)

Feature ID	Feature or function	Description	Book	See
SAM-31424 m10099-06	WMM support for Standards Updates to Dec 2012 for Release 8/9/10/11	This feature adds the following: <ul style="list-style-type: none"> global parameters: <ul style="list-style-type: none"> MSC CS Recovery Indication TMSI Based NRI MSC Selection Allow Mixed PDN Address Allocation Types timer: UE Radio Capability Match Request object: MSC NRI MSC server parameter: Non Broadcast LAC PLMN parameters: <ul style="list-style-type: none"> UE Radio Capability Match UE SRVCC Capability 	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116 for global parameters Procedure 8-117 for timers Procedure 8-110 for MSC NRI Procedure 8-108 for MSC server Procedure 8-61
SAM-31438 m10544-02	WMM support for New Link CLI	This feature adds NETCONF support for 9471 WMM EPS peers (links), allowing locking and unlocking of links from the 5620 SAM.	<i>5620 SAM LTEePC User Guide</i>	9471 WMM EPS peers and paths Procedure 16-4
SAM-31452 m11320-01	WMM support for 8 Diameter Connections with Load Balancing	This feature adds the "Load Balance" parameter to the IMSI to HSS routing object.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-74
SAM-31442 m10916-01	MME support to Remove Static Provisioning of TAC on MME for eNB access	This feature adds the "Discover TAIs" global parameter.	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116
SAM-31440 m10709-02	MME support for Offloading Overloaded MAFs and support for T3346 Timer	This feature adds the following: <ul style="list-style-type: none"> global parameters: <ul style="list-style-type: none"> Allow UE Offload on MME During MAF CPU Overload Enable MME Overload Backoff Timer timers: <ul style="list-style-type: none"> T3346 Attach Reject Minimum T3346 Attach Reject Maximum T3346 TAU Reject Minimum T3346 TAU Reject Maximum T3346 SR Reject Minimum T3346 SR Reject Maximum 	<i>5620 SAM LTEePC User Guide</i>	Procedure 8-116 for global parameters Procedure 8-117 for timers

(3 of 3)

eNodeB enhancements

The following table lists eNodeB enhancement features for this release of the 5620 SAM.

4 — New features

Table 4-48 eNodeB enhancements

Feature ID	Feature or function	Description	Book	See
eNodeB enhancements and support				
SAM-24986	5620 SAM support of LR14.1L FDD 9412 Macro and 9768 MRO eNodeB	The 5620 SAM supports discovery, management, and configuration for LR14.1L for 9412 Macro and 9768 MRO eNodeBs.	<i>5620 SAM LTE RAN User Guide</i>	—
SAM-29203	5620 SAM support of LR14.1L 9764 MCO	The 5620 SAM supports discovery, management, and configuration for LR14.1L for 9764 MCO eNodeBs.	<i>5620 SAM LTE RAN User Guide</i>	—
SAM-29205	5620 SAM support of LR14.1L 9763 MCI	The 5620 SAM supports discovery, management, and configuration for LR14.1L for 9763 MCI eNodeBs.	<i>5620 SAM LTE RAN User Guide</i>	—
SAM-29191	Wireless Supervision network view	The 5620 SAM Wireless Supervision application is a browser-based application for viewing LTE RAN network and KPI status.	<i>5620 SAM LTE RAN User Guide</i>	Chapter 20
SAM-39792	Custom 5620 SAM wireless workspace	The 5620 SAM features a dedicated workspace for wireless RAN management.	<i>5620 SAM LTE RAN User Guide</i>	Section 3.4
SAM-7252	5620 SAM support of soft shutdown	The 5620 SAM supports the sending of “shutdown” commands to eNodeBs and cells, allowing the locking of eNodeB resources with minimal service impact.	<i>5620 SAM LTE RAN User Guide</i>	Section 8.3
SAM-28510	5620 SAM support of the WCS eNodeB SW and configurations	The 5620 SAM supports the management of eNodeBs using WCS-compatible RRH and AA RFM units. The following functions are supported: <ul style="list-style-type: none"> display RFM type (RRH or AA) in the equipment navigation tree turn off RFM status LED view updated RFM input voltage and current enable transmission power increase to overcome antenna path loss 	<i>5620 SAM LTE RAN User Guide</i>	Section 14.6
SAM-28695	5620 SAM support of templates and geo-based self-configuration for MCO	The 5620 SAM supports template-based self-configuration for MCO eNodeBs. This is a 5620 SAM-O feature.	<i>5620 SAM Wireless OSS Interface Developer Guide</i>	“MCO template-based self-configuration”
SAM-28508	5620 SAM support of SW management improvements	The 5620 SAM supports the LR14 “load name” for running software and image files. The load name contains the release number, technology type, and release milestone.	<i>5620 SAM LTE RAN User Guide</i>	Section 15.5 Software naming conventions
SAM-7249	5620 SAM support of SW management for AISG devices	The 5620 SAM supports remote software upgrade management for AISG ALD of managed eNodeBs, including the following: <ul style="list-style-type: none"> software image management and transfer to NE software upgrade operation software upgrade monitoring 	<i>5620 SAM LTE RAN User Guide</i>	Section 14.5

(1 of 2)

Feature ID	Feature or function	Description	Book	See
SAM-29651	eNodeB HW types display in 5620 SAM GUI	The 5620 SAM supports factory-set LR14 hardware name parameters for enhanced accuracy in eNodeB cabinet naming.	<i>5620 SAM LTE RAN User Guide</i>	Section 3.3 Cabinet naming
SAM-28998	Security improvements for eNodeB management	The 5620 SAM supports changing the NE SNMP user passwords of managed eNodeBs.	<i>5620 SAM LTE RAN User Guide</i>	Section 12.6
eNodeB management enhancements				
SAM-31701	Take benefit of new Suspended state for 4G eNodeB management	The 5620 SAM supports the use of the “suspended” state for eNodeBs. The feature is useful as an alternative to the Unmanage function.	<i>5620 SAM LTE RAN User Guide</i>	Section 5.7
SAM-31413	User modification of 4G alarm severity in the 5620 SAM	You can customize the alarm severity of an eNodeB alarm by configuring the associated specific alarm policy.	<i>5620 SAM LTE RAN User Guide</i>	Section 17.2 Procedure 17-1
SAM-25428	Support of TCE for permanent call trace activation step 2	This feature adds the following functional changes: <ul style="list-style-type: none"> only users with the Administrator scope of command role can initiate a call trace collector load-balancing operation only one load-balancing operation can be active at a time the 5620 SAM automatically assigns pre-provisioned NEs to call trace collectors the 5620 SAM automatically assigns unassigned eNodeBs when call trace is activated via GUI or 5620 SAM-O 	<i>5620 SAM LTE RAN User Guide</i>	Chapter 19
SAM-31106	Log of eNodeB identity in user activities when WO are executed	The user activity log records the eNodeB name, WO file name, and 5620 SAM user name for WO activation actions.	<i>5620 SAM LTE RAN User Guide</i>	Activation session logging
SAM-27602	5620 SAM event/message log viewer - part 2	This feature adds the following functional changes: <ul style="list-style-type: none"> you can view user activity logs using the log viewer you can display the log viewer using the right-click contextual menu of an eNodeB alarm you can navigate to object change and event log entries from the log viewer 	<i>5620 SAM LTE RAN User Guide</i>	Chapter 18
SAM-29390	Visibility of search function in the Combined View	The eNodeB parameter search function is now always accessible at the top of the Network Element form.	<i>5620 SAM LTE RAN User Guide</i>	Section 7.6

(2 of 2)

4 – *New features*

A. *Sample end user license agreement*

A.1 Sample 5620 SAM end user license agreement A-2

A.1 Sample 5620 SAM end user license agreement

1. LICENSE

1.1 Subject to the terms and conditions of this Agreement, Alcatel-Lucent grants to Customer and Customer accepts a nonexclusive, nontransferable license to use any software and related documentation provided by Alcatel-Lucent pursuant to this Agreement ("Licensed Program") for Customer's own internal use, solely in conjunction with hardware supplied or approved by Alcatel-Lucent. In case of equipment failure, Customer may use the Licensed Program on a backup system, but only for such limited time as is required to rectify the failure.

1.2 Customer acknowledges that Alcatel-Lucent may have encoded within the Licensed Program optional functionality and capacity (including, but not limited to, the number of equivalent nodes, delegate workstations, paths and partitions), which may be increased upon the purchase of the applicable license extensions.

1.3 Use of the Licensed Program may be subject to the issuance of an application key, which shall be conveyed to the Customer in the form of a Supplement to this End User License Agreement. The purchase of a license extension may require the issuance of a new application key.

2. PROTECTION AND SECURITY OF LICENSED PROGRAMS

2.1 Customer acknowledges and agrees that the Licensed Program contains proprietary and confidential information of Alcatel-Lucent and its third party suppliers, and agrees to keep such information confidential. Customer shall not disclose the Licensed Program except to its employees having a need to know, and only after they have been advised of its confidential and proprietary nature and have agreed to protect same.

2.2 All rights, title and interest in and to the Licensed Program, other than those expressly granted to Customer herein, shall remain vested in Alcatel-Lucent or its third party suppliers. Customer shall not, and shall prevent others from copying, translating, modifying, creating derivative works, reverse engineering, decompiling, encumbering or otherwise using the Licensed Program except as specifically authorized under this Agreement. Notwithstanding the foregoing, Customer is authorized to make one copy for its archival purposes only. All appropriate copyright and other proprietary notices and legends shall be placed on all Licensed Programs supplied by Alcatel-Lucent, and Customer shall maintain and reproduce such notices on any full or partial copies made by it.

3. TERM

3.1 This Agreement shall become effective for each Licensed Program upon delivery of the Licensed Program to Customer.

3.2 Alcatel-Lucent may terminate this Agreement: (a) upon notice to Customer if any amount payable to Alcatel-Lucent is not paid within thirty (30) days of the date on which payment is due; (b) if Customer becomes bankrupt, makes an assignment for the benefit of its creditors, or if its assets vest or become subject to the rights of any trustee, receiver or other administrator; (c) if bankruptcy, reorganization or insolvency proceedings are instituted against Customer and not dismissed within 15 days; or (d) if Customer breaches a material provision of this Agreement and such breach is not rectified within 15 days of receipt of notice of the breach from Alcatel-Lucent.

3.3 Upon termination of this Agreement, Customer shall return or destroy all copies of the Licensed Program. All obligations of Customer arising prior to termination, and those obligations relating to confidentiality and nonuse, shall survive termination.

4. CHARGES

4.1 Upon shipment of the Licensed Program, Alcatel-Lucent will invoice Customer for all fees, and any taxes, duties and other charges. Customer will be invoiced for any license extensions upon delivery of the new software application key or, if a new application key is not required, upon delivery of the extension. All amounts shall be due and payable within thirty (30) days of receipt of invoice, and interest will be charged on any overdue amounts at the rate of 1 1/2% per month (19.6% per annum).

5. SUPPORT AND UPGRADES

5.1 Customer shall receive software support and upgrades for the Licensed Program only to the extent provided for in the applicable Alcatel-Lucent software support policy in effect from time to time, and upon payment of any applicable fees. Unless expressly excluded, this Agreement shall be deemed to apply to all updates, upgrades, revisions, enhancements and other software which may be supplied by Alcatel-Lucent to Customer from time to time.

6. WARRANTIES AND INDEMNIFICATION

6.1 Alcatel-Lucent warrants that the Licensed Program as originally delivered to Customer will function substantially in accordance with the functional description set out in the associated user documentation for a period of 90 days from the date of shipment, when used in accordance with the user documentation. Alcatel-Lucent's sole liability and Customer's sole remedy for a breach of this warranty shall be Alcatel-Lucent's good faith efforts to rectify the nonconformity or, if after repeated efforts Alcatel-Lucent is unable to rectify the nonconformity, Alcatel-Lucent shall accept return of the Licensed Program and shall refund to Customer all amounts paid in respect thereof. This warranty is available only once in respect of each Licensed Program, and is not renewed by the payment of an extension charge or upgrade fee.

6.2 ALCATEL-LUCENT EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, REPRESENTATIONS, COVENANTS OR CONDITIONS OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, WARRANTIES OR REPRESENTATIONS OF WORKMANSHIP, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, DURABILITY, OR THAT THE OPERATION OF THE LICENSED PROGRAM WILL BE ERROR FREE OR THAT THE LICENSED PROGRAMS WILL NOT INFRINGE UPON ANY THIRD PARTY RIGHTS.

A. Sample end user license agreement

6.3 Alcatel-Lucent shall defend and indemnify Customer in any action to the extent that it is based on a claim that the Licensed Program furnished by Alcatel-Lucent infringes any patent, copyright, trade secret or other intellectual property right, provided that Customer notifies Alcatel-Lucent within ten (10) days of the existence of the claim, gives Alcatel-Lucent sole control of the litigation or settlement of the claim, and provides all such assistance as Alcatel-Lucent may reasonably require. Notwithstanding the foregoing, Alcatel-Lucent shall have no liability if the claim results from any modification or unauthorized use of the Licensed Program by Customer, and Customer shall defend and indemnify Alcatel-Lucent against any such claim.

6.4 Alcatel-Lucent Products are intended for standard commercial uses. Without the appropriate network design engineering, they must not be sold, licensed or otherwise distributed for use in any hazardous environments requiring fail safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life-support machines, or weapons systems, in which the failure of products could lead directly to death, personal injury, or severe physical or environmental damage. The Customer hereby agrees that the use, sale, license or other distribution of the Products for any such application without the prior written consent of Alcatel-Lucent, shall be at the Customer's sole risk. The Customer also agrees to defend and hold Alcatel-Lucent harmless from any claims for loss, cost, damage, expense or liability that may arise out of or in connection with the use, sale, license or other distribution of the Products in such applications.

7. LIMITATION OF LIABILITY

7.1 IN NO EVENT SHALL THE TOTAL COLLECTIVE LIABILITY OF ALCATEL-LUCENT, ITS EMPLOYEES, DIRECTORS, OFFICERS OR AGENTS FOR ANY CLAIM, REGARDLESS OF VALUE OR NATURE, EXCEED THE AMOUNT PAID UNDER THIS AGREEMENT FOR THE LICENSED PROGRAM THAT IS THE SUBJECT MATTER OF THE CLAIM. IN NO EVENT SHALL THE TOTAL COLLECTIVE LIABILITY OF ALCATEL-LUCENT, ITS EMPLOYEES, DIRECTORS, OFFICERS OR AGENTS FOR ALL CLAIMS EXCEED THE TOTAL AMOUNT PAID BY CUSTOMER TO ALCATEL-LUCENT HEREUNDER. NO PARTY SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER OR NOT SUCH DAMAGES ARE FORESEEABLE, AND/OR THE PARTY HAD BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7.2 The foregoing provision limiting the liability of Alcatel-Lucent's employees, agents, officers and directors shall be deemed to be a trust provision, and shall be enforceable by such employees, agents, officers and directors as trust beneficiaries.

8. GENERAL

8.1 Under no circumstances shall either party be liable to the other for any failure to perform its obligations (other than the payment of any monies owing) where such failure results from causes beyond that party's reasonable control.

8.2 This Agreement constitutes the entire agreement between Alcatel-Lucent and Customer and supersedes all prior oral and written communications. All amendments shall be in writing and signed by authorized representatives of both parties.

8.3 If any provision of this Agreement is held to be invalid, illegal or unenforceable, it shall be severed and the remaining provisions shall continue in full force and effect.

8.4 The Licensed Program may contain freeware or shareware obtained by Alcatel-Lucent from a third party source. No license fee has been paid by Alcatel-Lucent for the inclusion of any such freeware or shareware, and no license fee is charged to Customer for its use. The Customer agrees to be bound by any license agreement for such freeware or shareware. CUSTOMER ACKNOWLEDGES AND AGREES THAT THE THIRD PARTY SOURCE PROVIDES NO WARRANTIES AND SHALL HAVE NO LIABILITY WHATSOEVER IN RESPECT OF CUSTOMER'S POSSESSION AND/OR USE OF THE FREWARE OR SHAREWARE.

8.5 Alcatel-Lucent shall have the right, at its own expense and upon reasonable written notice to Customer, to periodically inspect Customer's premises and such documents as it may reasonably require, for the exclusive purpose of verifying Customer's compliance with its obligations under this Agreement.

8.6 All notices shall be sent to the parties at the addresses listed above, or to any such address as may be specified from time to time. Notices shall be deemed to have been received five days after deposit with a post office when sent by registered or certified mail, postage prepaid and receipt requested.

8.7 If the Licensed Program is being acquired by or on behalf of any unit or agency of the United States Government, the following provision shall apply: If the Licensed Program is supplied to the Department of Defense, it shall be classified as "Commercial Computer Software" and the United States Government is acquiring only "restricted rights" in the Licensed Program as defined in DFARS 227-7202-1(a) and 227.7202-3(a), or equivalent. If the Licensed Program is supplied to any other unit or agency of the United States Government, rights will be defined in Clause 52.227-19 or 52.227-14 of the FAR, or if acquired by NASA, Clause 18-52.227-86(d) of the NASA Supplement to the FAR, or equivalent. If the software was acquired under a contract subject to the October 1988 Rights in Technical Data and Computer Software regulations, use, duplication and disclosure by the Government is subject to the restrictions set forth in DFARS 252-227.7013(c)(1)(ii) 1988, or equivalent.

8.8 Customer shall comply with all export regulations pertaining to the Licensed Program in effect from time to time. Without limiting the generality of the foregoing, Customer expressly warrants that it will not directly or indirectly export, reexport, or transship the Licensed Program in violation of any export laws, rules or regulations of Canada, the United States or the United Kingdom.

8.9 No term or provision of this Agreement shall be deemed waived and no breach excused unless such waiver or consent is in writing and signed by the party claimed to have waived or consented. The waiver by either party of any right hereunder, or of the failure to perform or of a breach by the other party, shall not be deemed to be a waiver of any other right hereunder or of any other breach or failure by such other party, whether of a similar nature or otherwise.

8.10 This Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario. The application of the United Nations Convention on Contracts for the International Sale of Goods is hereby expressly excluded.

A. Sample end user license agreement

Customer documentation and product support



Customer documentation

[Customer Documentation Welcome Page](#)



Technical Support

<http://support.alcatel-lucent.com>



Documentation feedback

documentation.feedback@alcatel-lucent.com

