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*************************************************************************
[NEW_RELEASE] System Software Beetle M5 15.4.4694 Release Notes
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Required minimum version: Jelly M1 2187

NEW FUNCTIONALITY:

Selective HFH functionality:
----
* Proprietary protocol similar to HFH but only for target SSs (not for all
connected SSs). When the SS receives a selective HFH message aimed at its
basic CID, it starts an HFH process to switch to the indicated frequency, but
the BS remains at its original frequency. Selective HFH is the basic
mechanism used to switch users among sectors of the same zone (Unified Radio
Zones).
* Support to this protocol is indicated by both the BS and SS in the messages
they exchange during the registration process (REG-REQ, REG-RSP).
* Added support to signal cycle via selective HFH with return messages. When
the SS receives a selective HFH with return message, it returns to the
original frequency automatically after a period of time. In the case it is
switched to a frequency where the BS is not listened to, frame number
corrections are performed.
* HFH tx power storage support. Now the SS stores the tx Power when an HFH is
requested, so that if the BS requests an HFH back to a previously used
channel, the SS can retrieve the previously used tx power, thus reducing the
needed corrections by the BS and improving the dynamic behaviour.

SS acceptance and maintenance criteria:
----
* BS can forbid the entry of an SS into a cell or can disconnect an SS from a
cell according to their signal parameters (min and max RSSI, min CINR, min
modulation) and their distance. Maintenance of a user in a cell is checked
every 200 allocations.
* These criteria can be configured via BS web (Cell Setup) and sys_ctrl.
* Acceptance and maintenance criteria parameters persist in config file, in
new <entry_control> and <maint_control> nodes added inside <cellparameters>.
* Maximum measurable positive RSSI error is 5dB and thus, this value is now
limited.

Remote command protocol:
----

* Proprietary protocol by which the BS can command actions to all (or selected) connected SSs via web (Cell Setup) or sys_ctrl. SS acknowledges the reception of the commands and performs the action if possible.
* Actions can be executed right when commanded or can be programmed on a daily basis at some particular day time.
* Available actions are: save config, force OTA updates, reboot, change to AFS best fit range, enable/disable HTTPS, run once SA, enable/disable support to remote command protocol.
* Support to this protocol is indicated by both the BS and SS in the messages they exchange during the registration process (REG-REQ, REG-RSP). This support can be enabled/disabled at the SS (via web or sys_ctrl).
* Persistence at the configuration file. SS saves its support to remote command protocol whereas BS saves programmed commands.

Spectrum analyzer persistence:
----
* The result of last SA execution is saved in a JSON file both for BS and SS. This way, it can be recovered and showed at the web when device is rebooted. Only frequency information is stored in that file, no detailed time measures are stored for memory reasons.

ACL:
----
* Volatile users can be created via sys_ctrl or web user interface. Volatile users are temporary and deleted after rebooting the device.
* API REST to manage users (get users / create user / delete user / change password / reset passwords / reset users and passwords).
* 'Change User' link now presents the user/password dialog directly, without redirecting the user to a form.
* The name of the logged user is now showed too at the CPE & Link webs (Top Frame > Name/Location submenu).

Link budget:
----
* A theoretical RSSI estimated through a link budget calculation (based on the antennas gain, the transmission power, frequency and distance) can be selected to be shown at:
  * BS: Signal Stats, extended option (SW ver, frequency/net mode, estimated link budget) per user.
  * SS: Link Status, link tab

Postconnect/postdisconnect alarm:
----

* CPE web page now shows an alarm at the top frame if there are no valid postconnect/postdisconnect configurations (postconnect but not postdisconnect, any of them is not executable...).
Improvement of AFS mechanism behaviour:
----
* There was a strange behaviour in the best fit scan when the SS was disconnected from the BS after a long time. If the age of the scan was older than 15 min then the SS would retry to connect to the BS up to 6 times, which should not be like that. Now the algorithm is as follows:
  * If the scan age is > 15 min then up to 1 retry is done to reconnect to the BS.
  * If the scan age is < 15 min depending on the disconnect cause, the SS retries a different number of times.
* Better AFS scan logs when BSID not allowed.
* Better SS frame detection logic. The phy always injects to the mac layer a UL digest with the detected frame number.

Log rationalization:
----
* Some unnecessary debug messages removed from dmesg and system log.
* Loading/unloading scripts now handle errors when killing daemons and show more coherent messages.

DHCP options:
----
* Hostname DHCP option is now sent in DHCP messages.
* Some DHCP options (IP mask, gateway, DNS servers, broadcast IP) read at the DHCP client are now parsed for their reconfiguration (if needed) during the renewal of a DHCP lease.

Recovery (lite) file system improvements:
----
* Support to Albentia Device Discover protocol.
* Support to basic HHU commands, so that HHU shows some information.
* Default IP for CPEs is 192.168.0.128.

Remote boot and recovery systems:
----
* Support to remote boot system. During the boot up of the devices, there is a small window for them to load a bootable RAM image. If no image is loaded, then they boot from their flash image.

* Support to boot recovery system. If during the update of a devices it is switched off, then the system allows to flash a recovery binary (recovery_prd.bin) from an external TFTP server (must be at 10.11.12.1).
* The configuration of these two systems lives at the bootloader parameters, that can be flashed as a system component in the update process.
* This two systems are supported but not included in this Beetle M5 release yet, as they require a bootloader major update.

Generic web improvements
----
* "Detailed Signal Info" view in "Signal Stats" shows now in its last table the same information as the one in "Basic Signal Info".
* VNF and SL values deleted from "Signal stats" CSV files. Net mode, frequency mode and expected DL & UL RSSI values added.
* Changes in 'Networking Setup' > 'Change IP Address':
  * Gateway is now optional.
   * In DHCP configuration, fallback IP is optional (default fallback IP is 169.254.128.128/16). Gateway is obtained by DHCP by default.
* Some useful state is held in certain webpages as JS values for better UI interactions.
* Spectrum Analyzer web page. Last SA scan highlight changes its color to blue, in order to differentiate it from the max. RSSI value. Also, last scan highlight is no longer displayed when the SA is not actively running. 'Not measured' label only shows when there is at least one non-measured channel.
* Darker traffic bar colours at 'Traffic Stats' > 'Basic service stats'.
* Better URL shortening and support to selective URL shortening in the same web page.

Miscellaneous
----
* New command line tool nslookup, for querying DNS servers.
* Responses to Albentia Device Discover protocol queries now include platform information.
* SNMP support to DL/UL interference levels.
* Support to RSSI LED indicator keyring.
* SSH client (dbclient) moved to /usr/bin for an easier scp.

CORRECTED BUGS:
* Postconnect and postdisconnect scripts could be called with wrong parameters and thus, interfaces were not correctly configured/deconfigured and configuration file was not saved correctly.

* When dhcp-options were configured, DNS configuration was lost due to an incorrect parsing of the dnsmasq configuration file.
* Backwards compatibility is now provided in the parsing of <logconfig> config file nodes (log options configuration).
* Fixed bug that caused an infinite loop at the scheduler SS to take place at specific scenarios (PPPoE, 8ms frame duration...).
* UL traffic performance recent improvements (M3) could lead to underallocation under some asymmetric UL allocation circumstances. The SS Scheduler now introduces the concept of UL Debt to avoid this situation.
* Fixed bug in SS AutoBW scan configuration. Some BSs could not be correctly detected.
* Fixed PPPoE authentication bug by stopping PPPoE client when network device is going to be deleted.
* Services table overflowed when eight or more rows were shown.
* User with 'view' ACL profile could disconnect SSs linked to a BS from the 'Signal Stats' web and this ACL profile was not allowed to do so.
* CPE web page fixed for low resolution screen configurations.
* Fixed misleading translations in CPE WAN and HOME web pages.
* MAC HW address was not correctly shown at the HHU when MAC was not created.
* Fixed bug that made the throughput stats bars (Traffic Stats > Basic Cell Stats) take wrong values when MAC was stopped.
* Fixed bug that made the user/password dialog appear repeatedly when the user introduced the right credentials after a failed attempt.
* UL and DL CINR standard deviations were not being calculated correctly.
* Solved bug that made the SNMP scalar number of DL/UL packets objects overflow.
* Quoted strings in the system name, owner, e-mail, location or coords text fields leaded to wrong HTML display code.
* Fixed bug in the AFS logic when the SS was configured in AFS Best Fit mode, an HFH request was received and the MAC changed to resetting or if the frequency changed via HFH was not allowed.
* Fixed bug when parsing the default fallback gateway introduced by the user at the CPE web page.
* Fixed bug that killed web server when SNMP port was changed and SNMP daemon was not running.
* Bug fixed related to Albentia Discover Device protocol messages when using certain Ethernet network adapters.
* Web string sanitization to avoid HTML/JS injection.
* Invalid configuration (unified SMC + not bridged/bridged VLAN) was allowed. Fixed bug in provision daemon when loading users with unified SMC.
* Configuration load now checks the frequency limits for the radio params.
* Fixed bug that presented the VLAN ID with wrong endianness in CSL classifiers. Additionally, VLAN ID is now shown in decimal format.

* Fixed bug that leaded to the death of the provision daemon when deleting a user.
* A saturation condition leaded to a situation where the occupation factor took wrong values.
* Fixed bug in efficiency factor calculations. DL modulation values were taken into account to compute UL efficiency factor.
* Fixed missing status in calibration error paths.
* Bug fixed in CID control mechanism in SS. When CID control was stopped (AFS case), a race condition could lead to a situation where the CIDs list was freed but not fully reset.


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**************************************************************************
[NEW_RELEASE] System Software Beetle M4 15.4.4162 Release Notes
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Required minimum version: Jelly M1 2187

NEW FUNCTIONALITY:

Voice services related improvements
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* At the BS:
   * RTPS/nRTPS services are polled when their needs are zero for a large number of frames. Additionally, RTPS services polling interval parameter is now used for the same purpose (polling the user periodically so that RT traffic can be handled properly).
   * T27 timer is kept as active as long as the user is not in active state (and thus, fully connected).
* At the SS:
   * The number of frames for a candidate to starve (and thus, consider that user is in need of a contention BW req) is reduced from 5 to 2.
   * The reception of an ULMAP in the rx DMA is considered to be the event to tick the scheduler in the case of absence of the ULMAP rx IRQ. ULMAP rx IRQ is not triggered when that ULMAP has nothing for the SS (contention slots/unicast slots).
   * Corrected bug at the contention manager. Backoff algorithm value was always started with a value of 0.

Security improvements
----
* System partitions are now write-protected.
* Added web support to enable and disable ADD (Albentia Device Discover) functionality.

* Added support to change HTTP, SSH and SNMP ports from web.
* Classic and simplified webs now show a warning pop-up when some of the logins have a default password.
* Root user is now accessible and its password can be changed.
* Added system passwords recovery webpage (/gui/unlock.cgi). If user forgets root password, it can be reset via this webpage. The unlock code will be provided by the manufacturer.

System users management
----
* System users can be created / deleted via web (System Tools) and CLI (sys_ctrl).
* Redundant and not usually used users have been removed.
* Improved reset passwords functionality.
* Reset users functionality restores default logins and passwords associated to the product.
* The user can decide if factory restore will reset root password. In this case, its password is requested and checked.

Miscellaneous
----
* New BB Filtering functionality infrastructure for 3.5GHz devices.
* Burst accountant infrastructure in BS scheduler to take account of the number of UL bursts and their type.
* Antenna azimuth and elevation can be set and saved in config file for external antenna configurations.
* Ethernet (eth0) flow control configuration is saved in config file.
* Removed some warning messages that appeared due to backwards compatibility issues (no httpport, addd, sshport, snmpport xml nodes).
* Classic web save default configuration functionality was not taking into account the existence of postconnect/postdisconnect scripts and thus could lead to a nasty bug where configuration file was corrupted.
* CPE home webpage improved. It now shows frequency mode and if there is a postconnect/postdisconnect script.
* Log message when configuration file is saved.
* New EXTIN fields (from SS to BS). Frequency mode and CPE net mode are sent and showed at Signal Stats webpage.
* Better HFH interface. It now warns about the presence of CPEs with fixed frequency mode and about the target HFH frequency (if not multiple of 10MHz, default AFS range).
* SNMP functionality is now disabled by default.

CORRECTED BUGS:

* Traffic statistics were not properly computed when scheduler was overloaded.
* Maximum password length increased from 7 to 256 in PTP and CPE webs.
* Now the CPE correctly sends contention BWReq. Previously the Contention Manager was not correctly being reset and the BWReq resent strategy was not correct if a low number of opportunities per frame were present. Additionally, now the CPE sends aggregated BWReq based on the last aggregated one was sent.
* Product code was not correctly being handled and led sequences were, in general, not correctly shown.
* The basic flow view webpage was not correctly handling users with just DL (or just UL) only services.
* Now the MAC checks at start time if the frequency mode requires a frequency list and the number of items in the list. If the number is 0, it falls back to fixed frequency mode.
* Added support for frequency in range modes in the Link/PtP web UI.
* When BS sends its local time to CPE, the delta time is correctly computed in every case and a 1000 ms delta error is allowed.

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*****************************************************************************
[NEW_RELEASE] System Software Beetle M3 15.4.4074 Release Notes
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Required minimum version: Jelly M1 2187

NEW FUNCTIONALITY:

UL traffic performance improvement
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* Enhanced BW request heuristics in SS:
    * BW request history is taken into account. BW requests are only sent when it is considered that the BS does not know about current needs (there are new needs or more than 8 frames have gone by with needs and with no BW request being sent).
        * Zero BW requests are sent as soon as the service has no queued bytes.
        * Needs are updated after a send as they might have decreased.
        * Support for sending incremental BW requests.
        * More efficient BW request preallocation.
* Improved needs estimation in BS. After allocating a certain number of bytes to a user, scheduling is performed so that user's flows needs are decreased accordingly (taking into account min and max flow provisioning).

Major redesign of the CPE synchronism process

----
* Improved log traces.
* Now the phy and scheduler support standard, fast and ultrafast synchronization procedures.
* The AFS modes automatically select sync mode, always starting in ultrafast, then fast and, if sync fails, standard mode, and then it cycles back to ultrafast.
* BestFit mode is now more intelligent: it decides when to retry on a given frequency and avoids starting the whole scan again.
* CPE web improved: now the frequency report is clearer in best and first fit range modes.
* Reduced restart time: in ultrafast mode the scan time per channel is about 160ms from the initial 950ms.
* The overall 5GHz band scan takes, when no BS is detected, under 17s.
* Increased T2 max value limit.
* Contention Manager is now being reset after SS reset events.
* DSA-RSP now supports invalid SAIDs and returns its TLV to the BS.

Efficiency factor
----
* Efficiency factor is an indicator of the throughput performance of the cell which takes into account current user modulations, their provisioned max and committed traffic rates and the scheduler equalization configuration.
* New visualization modes (efficiency, efficiency with allocated, maximum, maximum with allocated) in 'Traffic Stats'. In efficiency modes, the throughput bars full scale is the efficiency factor whereas in maximum modes, the throughput bars full scale is the ideal max (all available symbols considered as 64QAM3/4). In allocated modes, allocation information is also shown.

Scheduler equalization
----
* New scheduler equalization modes (LowMod Protect Max, LowMod Protect Medium) created to prevail users with higher modulations over those with lower ones. Equal symbols equalization mode renamed to LowMod Protect Basic.

Log improvements
----
* Review of the log system both in BS and SS. Verbosity reduced and trace information increased.
* Logoptionsd daemon is now easier to use and compatible with external applications (freeradius, pppoe…).

Flow control
----
* Added flow control support in ethernet driver. It can be enabled/disabled via sys_ctrl.

Unified SMC
----
* Improvements in CPEs in bridged mode with unified SMC. Unified SMC gets its IP by DHCP but, in order for the data bridge not to lose its IP, that IP is set to the bridge as an alias. Besides, a fallback IP and mask can be specified and saved in case this information cannot be retrieved by DHCP.

Web improvements
----
* Signal stats web page has been optimized.
* Modulation aggregated throughput and distribution table shown next to 'Oversubscription Stats' in 'Traffic Stats'.
* Redesign of 'Basic Service Stats' section in 'Traffic Stats' web page. DL/UL flows are grouped by user and not just separated as DL/UL.

CPE simplified web page
----
* Ethernet stats shown in CPE home web page, in the Network Information table.
* "Save default config" option renamed to "Save config".
* OTA information is not changeable from CPE device web page, just shown for informative purposes as it is retrieved from BS and is not configurable.

RADIUS
------
* Support in radius client to Framed-Pool standard attribute. This attribute is used by Remote Network Protocol and Poold feature.
* Support in radius client to not recognized standard or vendor specific attributes.

SNMP
----
* SNMP performance improvement: SNMP parser skips all radio interfaces so that BSs with a lot of users do not suffer from a performance drop.

Default files
----
* New default file for Access BS:

* Max distance set to 10000m.
        * CP Size set to 1/32.
        * Scheduler equalization set to LowMod Protect Basic.
        * Default interference management set to Soft.
* New default file for Access CPE:
        * Freq mode set to Best Fit, instead of First Fit.

Platform
----
* Improved brctl command, now supports showmacs and showstp options among others.

CORRECTED BUGS:

* Bug fixed in the configuration of OTA updates. The system did not persist the plugin status (enabled/disabled) when saving the configuration. Now it is saved in system config node.
* Fixed minor WebUI bugs in provision wizard: Firefox browsers showed the provision wizard text unaligned.
* CPE remote time configuration system was not working properly as the timezone field was not being sent by BS. Now both local time and UTC diff values are being sent by BS and the CPE leaves a log message when the time is synced with BS's.
* Bug solved in AutoBW mode performance (in CPEs). AutoBW mode was not correctly setting BW configuration to the RF Driver and in 3.5GHz caused some problems with baseband filter selections.
* HFH functionality has been implemented in 3.5GHz band devices.
* Now the stats.cgi CSV download includes the interference level for both DL and UL.
* Bug fixed that caused a crash in the CPE due to an ARQ reset message.
* BS now sends DL Operation Profile in initial ranging RNG-RSP messages.
* Bug fixed in unpacking which yielded to invalid primary management message reception with packing.
* Fixed a memory leak in aa_tracker functionality.
* Bug fixed in the persistence of SNMP activation/deactivation option. Now it is correctly saved to and loaded from the configuration file.

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[NEW_RELEASE] System Software Beetle M2 15.4.3813 Release Notes
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Required minimum version: Jelly M1 2187

NEW FUNCTIONALITY:

Accounting
----
* Added RADIUS accounting support.

PBIM - Interference management
----
* Added PER Based Interference Management system.

Scheduler
----
* Tx flow starvation avoidance system. Now the flow checks if the scheduled allocation is not being used at all and, if the situation is kept over time, it will increase the reported needs to get bigger allocations.
* More than one symbol can be used for UL polling if available.

Configuration files
----
* Configuration filenames have been changed from wimaxX.xml to configX.xml.

Web
---
* After a web POST operation has been performed, operation URL is removed. This functionality avoids resending previous POST operations, especially for reboot, disconnect user and spectrum analyzer related actions.
* Added "Owner" information to PtP and CPE webs.
* Added main interface mode information to CPE home webpage.
* Now the BS has a "Disconnect User" button in the user detailed view page.
* Lost and recovered packet statistics are now shown in CPE simplified and classic webs.

Miscellaneous
----
* CSL memory allocation optimization when broadcast packet is sent.
* Bridge clone hw address feature is no longer available. All bridges will be created with main interface hw address.
* SS does not try to get autoupdater information if link is not established.
* System update process now shows more specific messages when update process fails.
* "DynAST" has been renamed to "Auto Frame Div".
* "Rx Mode" is now called "Noise reducer".
* PPPoE tx queue length parameter is now supported.

* iperf command is now available.
* Refinement of debug messages shown in system dmesg.

CORRECTED BUGS:

* Bug fixed in BW request and initial ranging slot assignation in CPEs. This caused UL signal degradation in very populated BSs.
* Bug fixed in CPE that caused noisy signals to be demodulated as broadcast CID PDUs, leading to wrong BSId setting.
* When PPPoE link has been lost, PPPoE client now tries to reconnect indefinitely.
* Bug fixed in BS scheduler. "Min ContBW" parameter was not taken into account and only one BW request was added to ULMAP.
* Added SMC support for tranzeo CPEs.
* When CPE networking option "Only access to CPE through management interface" was enabled, default gateway was not set.
* When VLAN was defined on a bridge and this bridge was a port of another bridge, the port was not added to its corresponding bridge when system configuration was loaded.
* Optimizations in fancyping command.
* Fixed minor issues between RADIUS and local AA provision modes.
* Bug fixed in SA web. JavaScript function caused bad web presentation.
* Classifiers from remote provision were not merged with the local provision.
* Bug fixed in "Change User" webpage.
* ARQ optimization / bug correction. Now when new feedback messages are to be sent, previous existing and pending messages that get outdated are removed. This reduces the total amount of feedback messages sent and reduces the number of invalid retries because ACKs are delayed in low modulation scenarios. Moreover, the system will not overallocate if TX and RX ARQ machines are desynchronized.
* BS scheduler now optimizes the free space in the frame for basic services. This optimization avoids starvation in basic services.
* If users provisioned via template were disconnected and then their provision was modified, the provision database would be corrupted.
* Bug fixed in DHCP server status coherence. When routed / routed NAT mode was set in CPE web, DHCP server was always enabled regardless of its previous status.
* Bug fixed in Mng CSL. DL traffic was overallocated when SMC out of band was enabled.
* Ranging subsystem now also disconnects users which are waiting for secondary service establishment if signal is not detected.

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******************************************************************************
[NEW_RELEASE] System Software Beetle M1 15.4.3540 Release Notes
******************************************************************************
Required minimum version: Jelly M1 2187

NEW FUNCTIONALITY:

Configuration files
-------------------
* Improvements in configuration files saving logic when postconnect.sh and
postdisconnect.sh scripts are defined. Postdisconnect.sh script is run before
saving device configuration and postconnect.sh script is run after
configuration was saved. This logic may avoid writing wrong configurations
when these script are defined.

CORRECTED BUGS:

* Fixed a bug in the CPE Web. The CPE WebUI showed some disorganised tables.
* Tracker of AA events did not show the distance when CPE was disconnected.
* BS shows the correct alias of users and groups when BS downloads the AA
information from CPS server.
* Bug fixed in DHCP client. When CPE was provisioned in local network mode,
the renewing DHCP process did not work properly.
* Fixed a memory leak in BS when CPEs were authenticated.


******************************************************************************
[NEW_RELEASE] System Software Beetle 15.4.3498 Release Notes
******************************************************************************
Required minimum version: Jelly M1 2187

NEW FUNCTIONALITY:

PPPoE support
-------------
* Added PPPoE client support in CPE.
* Added support for filtering and classification of PPPoE traffic over the
air.
* MSS clamping is enabled when PPPoE network configuration is activated.


Provision templates
-------------------
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* New AA mode: provision by templates. This allows the provision of several users with the same previously defined template.
* This new feature is supported in RADIUS provision mode.

RADIUS
------
* Added RADIUS flow support.
* Added RADIUS provision network support.
* Performance improvements: queue of requests, cache of responses and persistence of RADIUS server state.
* Username sent to RADIUS server can be separated by none, colon, hyphen and underscore.
* Support to realms (prefix and suffix).
* Correct handling of Session-Timeout scenarios. Parameter Session-Timeout added on WebUI.
* Correct handling of provision type switches from RADIUS to local and vice versa.
* Timestamp update on reception of Access-Response messages from RADIUS server.

Burst mode
----
* Only available for DL services
* Burst mode functionality allows a service to be granted with a higher max data rate for a certain amount of time if its needs require it (i.e. they grow significantly in quite a short time period).

Hogger services
----
* This feature is available for DL services.
* Hogger services can make use of the remaining capacity (even above their provisioned max rate) if no other services require it. A round robin policy is applied when several hogger services exist.

Spectrum analyser
----
* Added mean and minimum RSSI bars and channel quality score in SA visualization.

Dynamic frequency selection
----
* DFS system now takes into account the computed channel quality score from improved SA calculations.

Tracker of AA events
----
* This functionality is responsible of tracking, recollecting and showing in the WebUI the events of the AA process (ACTIVE, DISCONNECT...) and their stats.
* Log messages of AA process can now be enabled/disabled.

High IP3 mode
----
* It allows the operator to choose between two radio configurations: high sensitivity (default) and low distortion (with a better response in high-interference environments).

DHCP options
----
* DHCP options can be configured via sys_ctrl, BS and CPE WebUIs.

Merge AA provision files
----
* Local AA provision file can be now merged/combined with an updated AA provision file via Local AA webpage.

Performance optimizations
----
* Both in tx and rx paths.
* Critical path reviewed and enhanced.
* Optimization of IRQ handling.
* Better stats processing strategy in rx path.
* Implemented coalescence system when freeing tx buffers.
* Improved mutex use in CIDs control system.

Scheduler enhanced performance
----
* Automatic configuration of scheduler basic parameters is now available. Manual mode can be enabled too.
* Scheduler polling stats are now available in the 'stats' command and the web.

Leds
----
* When device is booted, a code is shown at the leds depending on its product type.

Firmware update logic
----
* Update process now takes into account the major and minor versions of the firmware, not only the compilation version.

Extended protocol
----
* BS and SS now exchange both SMC and data networking information (if available). If data and management interfaces have an IP address set, two links to SS web are shown in BS UserStats web.

Weight classifiers feature
----
* Weight feature in classifiers description now available for UL services.

SMC
---
* A route can be configured for SMC interface.

WebUI
-----
* Visual improvements in Local AA webpage in the provision file management operations.
* Oversubscription stats now available in BW Stats webpage.
* Service flags in BW Stats webpage to help the identification of a service by visual inspection.
* Visual improvements in CPE WebUI.
* Reset password functionality added to classic WebUI.

General
----
* Default flow max rate value is now 1024kbps.
* Max flow rate is now set to 34Mbps.
* Full information about ARQ parameters is now shown in sys_ctrl flow menu.
* CPE WebUI now informs of the existance of a postconnect.sh prior to system configuration.
* CPE delay stats received at BS are now limited to reasonable values.
* Default max user distance changed from 25km to 12.5km in Access BS devices.

CORRECTED BUGS:

* Important bugs fixed in UL TBIM algorithm and in the calculation of the gap between DL and UL in highly overloaded traffic scenarios.
* Corrected bug in SMC broadcast packet handling in multiple SMC user situations.
* Corrected bug in SMC web configuration. SMC networking information was reset when SMC configuration was modified.
* ARQ block size attribute was not being computed for SMC. Instead, a fixed value of 1024 bytes was being set.
* Fixed bug in the automatic computation of ARQ parameters.
* Ethernet speed could not be set to auto when coming from a forced mode. This has been solved and additionally, giga speeds are correctly handled.
* Corrected bug in the processing of DL packets by their weight (high and medium weight priorities).
* Users from a group are disconnected when the group is removed.
* Corrected bug in bridged VLAN provisioning network configuration.
* Corrected bug in SA 'Run Once' method. If an empty set is configured, then all frequencies are scanned.
* Corrected bug in DMZ web configuration.