Verifone®

Verix eVo for ARM-11
Version 2.8.19.1
Previous Releases Change History
20-November-2017

Table of Contents

1.0   Introduction

This document lists the significant changes in the Verix eVo package release.

2.0   Change History

2.1   Significant Changes from Version 2.8.17.2 to 2.8.18.0

- Amdocs case fix:
  - ESAMDOCS-3177(Amdocs Case 170901-33303): e355; SCA4.0.2; e355 not going to sleep or dimming screen

2.2   Significant Changes from Version 2.8.16.2 to 2.8.17.2

- SSL change:
  - Additional logs in SSL. SSL debug logs are made configurable with *SSLDEBUG. *SSLDEBUG=1 need to be downloaded in GID1 to get SSL debug logs
- TCPIP change:
  - Fixed issue when DnsGetHostByName() blocks at specific URL
- Fixed issues as described on the following Amdocs Cases:
  - ESAMDOCS-1814 (Amdocs Case 170425-8461): E355 crash when activating a Wi-Fi Profile
  - ESAMDOCS-3179: Vx690 could not establish connection to ETH over Bluetooth if VMAC is installed
  - ESAMDOCS-3362: Vx520;eVo;CE_EVT_START_NW with no DHCP
    - Changed the minimum value of network parameter BOOT_RETRIES from 5 to 1
    - Setting value to 2 fixes the long TCPIP timeout response when DHCP is disabled on server

2.3   Significant Changes from Version 2.8.15.1 to 2.8.16.2

- Fixed issues as described on the following Amdocs Cases:
  - ESAMDOCS-855 (Amdocs Case 160914-15883): e355; Roaming failures with threshold below 80%

- Fix issue on e355 wherein EAP authentication sometimes fails
  - ESAMDOCS-2055: eVo;EOS;PPP_GSM;Comm Engine freezes at CE_EVT_START_NW state
    - Added new NW parameter TCPIP_EVT_TO. This parameter sets the timer (in milliseconds) to wait for a PPP event.
      - Default value = 0
      - Range: 0 – 120000ms
  - ESAMDOCS-2156: eVo;EOS;GPRS;PDP Context Activation Attempts
  - ESAMDOCS-2433 (Amdocs Case 170623-31138): Vx520; GPRS; TLS 1.2 communication issue
  - ESAMDOCS-2811: eVo;EOS;GPRS;CE;Open GPRS/GSM interface when Sim Card is Blocked
    - Added new DDI parameter GPRS_SIM_PIN_CHECK_ACT and GSM_SIM_PIN_CHECK_ACT to specify at which state will SIM PIN Check be done
      - 0: IDLE state to OPEN state
      - 1: OPEN state to LINK state

2.4 Significant Changes from Version 2.8.14.3 to 2.8.15.1

- Fix for ESAMDOCS-2220: EOS Network Interface Priority Change
  - Set the NWIF priority to the 3rd parameter (hops) of AddDefaultGatewaySESM().

2.5 Significant Changes from Version 2.8.13.0 to 2.8.14.3

- Added Bluetooth manager reconnection status reporting via CE_EVT_NWMGR_CONN_STATUS CE event
  - Added the following CE_EVT_NWMGR_CONN_STATUS neParam1 reconnection statuses:
    - RECONN_START – Bluetooth manager SPP automatic reconnection has started
    - RECONN_STOP – Bluetooth manager SPP automatic reconnection has stopped
  - Added the following CE_EVT_NWMGR_CONN_STATUS neParam2 reconnection status for RECONN_STOP:

- • `BTMGR_CLI_RECONN_TO` – Bluetooth manager automatic reconnection timeout has expired

  - • `BTMGR_CLI_RECONN_FORCE` – Automatic reconnection is forcefully stopped by the application using ceConfigNWMgr() API

  - • `BTMGR_CLI_RECONN_DEV_UNPAIRED` – Automatic reconnection is stopped because terminal is no longer paired to the remote device

- • Fixes for the following Amdocs Cases:

  - o ESAMDOCS-2032: AuthEx for libcom corrupts memory

  - o ESAMDOCS-2220: EOS Network Interface Priority Change

    - • Added config.sys variable *EOSNWIFHRCHY.

      - o Description: This config.sys variable when set in GID 1 will enable users to change the NWIF hierarchy by entering the desired media names separated by commas. The first media before the comma will be the highest priority while the last media after the last comma will be the lowest priority.

      - o All valid media names: ETH,GPRS,WIFI,BT,CDMA,DIAL,ISDN

  - o ESAMDOCS-2324: EOS is sending a CE_EVT_SIGNAL -1 even if signal is 100%

2.6   Significant Changes from Version 2.8.12.2 to 2.8.13.0

- • Fixed issues as described on the following Amdocs Cases:

  - o 170313-5065: GSM connection does not work

    - • Added DDI INI parameters GP_SWITCH_NWIF_CONFIG and GS_SWITCH_NWIF_CONFIG to give the user or application the control to choose which operations via AT commands will be re-executed or skipped while switching from GPRS to GSM or vice versa by enabling or disabling the corresponding bit mask.:

      - • Bit Masks:

        - o bit[0]

          1: Test modem operability.

          0: Do not test modem operability.

        - o bit[1]

          1: Enable CMEE Error Result Code.

          0: Do not enable CMEE Error Result Code.

- o bit[2]

    1: Send startup string to mux1.

    0: Do not send startup string to mux1.

- o bit[3]

    1: Send startup string to mux2.

    0: Do not send startup string to mux2.

- o bit[4]

    1: Send startup string to mux3.

    0: Do not send startup string to mux3.

- o bit[5]

    1: Register URC events.

    0: Do not Register URC events.

- o bit[6]

    1: Select operator.

    0: Do not select operator.

- o bit[7]

    1: Get radio model & firmware

    0: Do not get radio model & firmware

- Valid values: 0-255

- Default value: 255

- Data type: integer

- Config.sys: GP_SWITCH_NWIF_CONFIG

    GS_SWITCH_NWIF_CONFIG

- o ESAMDOCS-2026: E355;BT Comms problem; BT reconnect not possible.

- o ESAMDOCS-2054: After GSM firmware download EOS does not reboot the terminals sometimes

- o ESAMDOCS-2059: eVo;EOS;GPRS;Comm Engine stuck at CE_LINK after detach request (Incremental Startup)

2.7   Significant Changes from Version 2.8.11.0 to 2.8.12.2

- Added FTP API FTPClientPostConnectionChecks() for configuring the post connection verification options in FTPS

- Fixed incomplete file download returning success in FtpClientGetFile()
- Fixed issues as described on the following Amdocs Cases:
  - 170112-20840: EOS; eVo; WiFi reconnect problems on specific router restart
  - 170515-4765: EOS: VX675 BT-WIFI CTLS 40MM; VX675; Bluetooth pairing process
  - ESAMDOCS-1961: CXPI 16 Vx ADK issues - NO.VXNCP is crashing (During UAT by SE)

2.8   Significant Changes from Version 2.8.10.1 to 2.8.11.0

- Fixed the following ESAMDOCS Cases:
  - ESAMDOCS-1423: [CCP] GPRS fails to start
  - ESAMDOCS-1482: Vx820 DUET – ISDN connection problems

2.9   Significant Changes from Version 2.8.9.2 to 2.8.10.1

- Merged with EOS 2.8.8.2.
- Added specific extended error codes for BT IOCTL calls
  - `E_DDI_PROFILE_NOT_AVAIL`
  - `E_DDI_BT_CONFIRM_PAIR_UNEXPECTED`
  - `E_DDI_BT_CONFIRM_PAIR_DENIED`
  - `E_DDI_BT_REMOVE_PAIR_NOT_ALLOWED`
- Fixed the following Amdocs Cases:
  - 161202-32213 : VX675 3G; Firmware failure, not running
  - 170130-2967: EOS; GPRS; PIN retry
  - 170131-9179: Vx690; BT base pairing question
  - 170131-10584: Vx680;eVo;REDE;EOS;CE;GSM; Call to ceStopDialIF never returns
  - 170206-8065: Vx675; Vx680 3G; Dual SIM; Registration failed with latest EOS

2.10 Significant Changes from Version 2.8.8.2 to 2.8.9.2

- Added new CEIF API `ceConfigNWMgr()` to allow applications to send commands to Bluetooth Manager. Network manager commands that can be issued are as follows:

- o `START_CONN` - command BT_MGR to start an SPP connection

- o `STOP_CONN` - command BT_MGR to stop an existing SPP connection

- o `TOGGLE_EVENT_NOTIFICATION` - toggles BT_MGR connection status events notification

- Updated the maximum AT command length from 50 characters to 100 characters for GP/GS_INIT1 to GP/GS_INIT4.

- Fixed parsing issue of AT^SMONG when GP_MONITOR is set to TRUE.

- Fixed the following Amdocs Cases:

  - o 161202-32213: VX675 3G; Firmware failure, not running

  - o 170106-23498: FTP -DESCRIPTION OF ERROR CODES

  - o 170109-5170: EVO; corrupted Binary file with FtpGet

  - o 170129-1034: Vx820 Duet; Bendigo - Migration package crashing on dial

2.11 Significant Changes from Version 2.8.7.0 to 2.8.8.2

- Added support for camp-cell checking in 3G GPRS/GSM DDI drivers

  - o 3G GPRS/GSM DDI driver's connection logic is enhanced to use *AT^SMONI* AT command to check if the radio is camped in a serving cell, before proceeding to attachment.

  - o The following DDI INI parameters are added to toggle this feature:

    - GP/GS_SEARCH_CELL – toggles camp-cell checking logic. When enabled, camped status will continuously be checked if the radio is before proceeding further to regular NWIF startup process

      - o Range: 0 – 1

        - 0: Disable (default)

        - 1: Enable

    - GP/GS_SEARCH_CELL_TO – dictates how long the camp-cell check logic will be executed

      - o Range: 500 – 120000 (in milliseconds)

      - o Default: 30000

    - GP/GS_SEARCH_CELL_DLY_INT – interval between issuing of AT^SMONI to the radio to check camp-cell status

      - o Range: 10 – 10000 (in milliseconds)

      - o Default: 200

2.12 Significant Changes from Version 2.8.6.4 to 2.8.7.0

- Fixed issues as described on the following Amdocs Cases:
  - 161103-24789: Vx685; EVO; GPRS; CE; Modem is not able to return to correct CELL in due time
    - Added a new DDI INI parameter GP_END_DEL_EX_CMD or GS_END_DEL_EX_CMD which defines the end delimiter to use when parsing AT command response sent via IOCTL EX_CMD
      - Valid values: 0 – 99
      - Default value: 0

2.13 Significant Changes from Version 2.8.5.2 to 2.8.6.4

- SSL changes:
  - Upgraded SSL2 library to OpenSSL 1.0.2.h.
  - Enabled ECC cipher suites.
  - Note: Existing SSL applications using the following APIs should be rebuilt with the new ssl2.o interface:
    - `ASN1_UTCTIME_check()`
    - `ASN1_GENERALIZEDTIME_check()`
    - `BIO_new_mem_buf()`
    - `BIO_new_connect()`
    - `BIO_new_accept()`
    - `EVP_DigestVerifyFinal()`
    - `OCSP_sendreq_bio()`
    - `OCSP_sendreq_new()`
    - `OCSP_parse_url()`
- Fixed issue where CommEngine is not sending CE_EVT_NET_UP after successful reconnection during roaming and is using static IP and WI_ROAM_RENEW_IP=1.
- Fixed issues as described on the following Amdocs Cases:
  - 160923-57067: eVo; Elliptic curve cryptography support
  - 161006-22916: Vx675; WiFi; eVo; Reconnection to access point too long
    - Added the following Wi-Fi DDI INI variables to allow application to configure per channel scanning parameters:
      - WI_SCAN_PROBE – number of scan probes to send per Wi-Fi channel scanned.

- Valid values: 10 – 200

- Default value: 10

  - WI_SCAN_ACTIVE_TIME – amount of time (in milliseconds) a single Wi-Fi channel is scanned for access points

    - Valid values: 0 – 1000

    - Default value: 0

    - Note: A value of 0 means that the default value from the radio will be used.

- Added WI_ASSOC_RETRY Wi-Fi DDI parameter to allow application to enable and specify the number of Wi-Fi association retries whenever association to an access point fails.

  - Valid values: 0 – 10

  - Default value: 7

- 161018-13573: Vx520; Elliptic Curve Cryptographic support on Vx Evo

- 161031-4032: EOS; Time required to reach NWIF_CONN_STATE_INIT after call to ceStopNWIF

2.14 Significant Changes from Version 2.8.4.1 to 2.8.5.2

- Fixed the following Amdocs Cases:

  - 151120-23029: Vx680; WIFI; Roaming problem - connection lost but no roaming attempts

  - 160905-4242: Vx675; eVo;Terminal Attach Fails when try to connect to data net

2.15 Significant Changes from Version 2.8.3.2 to 2.8.4.1

- Fixed the following Amdocs Cases:

  - 160805-24274: Vx675; not working USSD on 3G

  - 160905-5532: e355; Bluetooth connection retries and device not in range

  - 160920-44441: VX690;Failure of Automatic Bluetooth reconnection, within 5 minutes

2.16 Significant Changes from Version 2.8.2.0 to 2.8.3.2

- Changed the default value of DDI INI parameter WI_ROAM from disabled to enabled

- Fixed issue wherein no DHCP event is received under certain circumstances

- o Added new NW parameter BOOT_RETRIES which sets the boot retries used for configuring TCPIP interface options.
  - Default value: 5
  - Range: 5-30
- Fixes for the following Amdocs Cases:
  - o 160513-23567: Vx690; DNS Fail When Bluetooth + GPRS Multi Homing
  - o 160805-24274: Vx675; not working USSD on 3G
  - o 160905-5532: E355; Bluetooth connection retries and device not in range

2.17 Significant Changes from Version 2.8.1.3 to 2.8.2.0

- Fixed TCPIP.bin file authentication failure

2.18 Significant Changes from Version 2.8.0.3 to 2.8.1.3

- Merged with EOS 2.1.10.6
- Enhanced NCP DNS-lookup menu by adding option to select NWIF.
- Fixed issue in deleting Wi-Fi profile when WIFIPROF.ini is deleted in GID1.
- Fixes for the following Amdocs Cases:
  - o 151120-23029 : Vx680; WIFI; Roaming problem - connection lost but no roaming attempts
    - o Enhanced Wi-Fi roaming recovery mechanism to execute a pro-active scan when disconnected from the network. This can be enabled using the following new Wi-Fi DDI parameters:
      - WI_ROAM_SCAN_MODE - Sets the pro-active roaming scan mode. Pro-active scan can only be done if WI_ROAM is enabled. Valid values are:
        - 0: disabled(default)
        - 1: Target scan (Only looks for the same SSID to which it was previously connected.
      - WI_ROAM_SCAN_MODE_INT - time interval (in milliseconds) between pro-active roaming scans.

- WI_ROAM_SCAN_TO - total timeout (in milliseconds) to do pro-active roaming scans.
  - 160329-5815 : Vx675; Wi-Fi; WSUP unable to detect that the terminal lost the connection with the AP
  - 160428-18764 : Vx520;eVo; cannot connect to host at a specific location
  - 160609-18113 : EOS; CE attempting to connect when network down
  - 160622-47451 : Vx675 3G; roaming takes too long to switch to new network
    - Added the following new GPRS DDI parameters:
      - GP_ATTACH_RET - Dictates the number of AT+CGATT retry attempts. Valid values are 1 to 50. Default value is 1.
      - GP_ATTACH_RET_INT - Dictates the time interval between AT+CGATT retry attempts. Valid values are 0 to 5000. Default value is 0.
  - 160714-20197 : e355;eVo; Staples; WPA2-EAP PEAP unable to connect using usr/pwd

2.19 Significant Changes from Version 2.4.2.3 to 2.8.0.3

- Merged with EOS 1.17.6.0 and 2.1.9.8

- Added new CE API: `ceActivateNWMgr()` – allows application to re-activate the BT_MGR main menu.

- Updated NCP to add new menu item under Tools menu, that allows users to re-activate the BT_MGR main menu.

- Added fix for an issue wherein EOS failed to abort GSM-only connect request when ABORT_CONN_REQ_ENABLE is set to TRUE.

- Enhanced the CE_DIALONLY_BLOCKING_DROP_TO_INIT and CE_DIALONLY_NONBLOCKING_DROP_ TO_INIT dial-mode options to behave as follows:
  - ceStopDialIF() will disconnect NWIF network and set it to INIT state.
  - ceStopDialIF()will return ECE_STATE_ERR error if already on INIT state. This is to maintain INIT state of the NWIF.

- Fixes for the following Amdocs Cases:
  - 151221-2209: Vx680; 7 secs delay, PPP Over USB

- o 160405-8062: VX825;eVo; SIX Austria; No ETH connection after repairs
- o 160415-22887: Vx680WiFi, IOCTL_SEARCH will take several seconds before WIFI_SCAN_RESULTS
  - ▪ Added new Wi-Fi DDI parameter `WI_SCAN_CNT` – dictates the number of times a scan of all Wi-Fi channels will be performed when an `IOCTL_SEARCH` command is invoked by application.
- o 160426-9077: EOS; Unable to determine Auto-Reconnect ended
- o 160531-10490: Vx675 3G; erroneous SIM PIN failure message instead of NO SIM CARD
- o 160602-16289: Crash on Vx690 in GID 46

2.20 Significant Changes from Version 2.4.1.3 to 2.4.2.3

- Fixes for the following Amdocs Cases:
  - o 151023-23967: Vx520; eVo; how to have both Ethernet and GPRS connections open.
  - o 160308-7312: eVo; GPRS; Connection authentication not accepted
    - Add new GPRS DDI parameter: GP_PDP_CONTEXT_ACT – Boolean DDI parameter that toggles activation of GPRS PDP context. Default value is false; PDP context is not activated.
  - o 160322-7419: Vx680 WIFI; system error on app restart; suspicion on WiFi profile

2.21 Significant Changes from Version 2.4.0.3 to 2.4.1.3

- Merged with EOS 2.1.8.8.
- Fixed the following Amdocs cases:
  - o 151216-13205: eVo FTPS connect failure
  - o 160115-21604: eVo;Vx690 Switch From Not Configured Or Defected SIM1 To SIM2 Failure
    - ▪ Add new CE NW parameter: `DSIM_AUTO_SWITCH_MODE2_RECON_PRI` – boolean NW parameter which value dictates what SIM card will be the first target of two-tiered auto-reconnection for dual SIM switch mode 2. Possible values are:
      - `TRUE` – two tiered auto-reconnection starts with the primary SIM card

- FALSE – two tiered auto-reconnection starts in the secondary SIM card
  - 160226-24031: Vx520C;Dialup Communication Only Complete the First TXN
  - 160226-24898: Verix eVo DnsGetHostByName() exception

2.22 Significant Changes from Version 2.3.1.1 to 2.4.0.3

- Merged with EOS 2.1.7.5
- Removed support for WEP Encryption for Wi-Fi Network Interface.
- Removed support for Ad-Hoc network type for Wi-Fi Network Interface.
- Added SSL vulnerability fixes:
  - Certificate verify crash with missing PSS parameter (CVE-2015-3194)
  - X509_ATTRIBUTE memory leak (CVE-2015-3195)

2.23 Significant Changes from Version 2.3.0.6 to 2.3.1.1

- Changed MAC.VSA to ASL.VSA in EOS manifest files.
- Amdocs case fixes:
  - 151020-8585: Vx675 BT; BT reconnection failed/delayed after going out/in of coverage area.
  - 140925-14191: Vx680 BT; Port open failed after in/out of range.
  - 151104-13702: EOS Application name mismatch.

2.24 Significant Changes from Version 2.2.0.23 to 2.3.0.6

- Bluetooth enhancements:
  - Added capability to list the supported profiles or services of each scanned or paired device.
    - New parameter `INI_BT_SRCH_SVCS_EN` to enable search of BT profiles or services during `IOCTL_SEARCH`.
    - Supported profile values can be found in `port_bt_bit` of structure `ddi_bt_device`. Valid values are:
      - `BT_PAN_AVAIL_BIT  = (1 << 16)`
      - `BT_MDM_AVAIL_BIT  = (1 << 17)`
      - `BT_SPP1_AVAIL_BIT = (1 << 18)`

Verix eVo for ARM-11

VeriFone Confidential

- o `BT_OBEX_AVAIL_BIT = (1 << 19)`
- o `BT_SPP_AVAIL_BIT  = (1 << 20)`
- o `BT_SPP2_AVAIL_BIT = (1 << 21)`
    - o Added capability to list the paired devices that are in-range.
  - The following IOCTL parameters are added:
    - o `IOCTL_GET_IN_RANGE_BT_PAIR_CNT`: Response is the number of paired Bluetooth devices that are in range.
    - o `IOCTL_GET_IN_RANGE_BT_PAIRED_DEVICES`: Response is a list of paired Bluetooth devices that are in range.
  - o Added support for Ethernet/BT interface for E355 terminals.
  - o Added a new IOCTL parameter IOCTL_EX_BT_DEV_PORT_RESTART to enable restart of the Bluetooth device port.
- Added MAC.VSA on EOS manifest files.
- TCPIP library updates:
  - o Amdocs case 150521-15425: eVo;Vx520; FTPS; Download issue when connected to a Linux server
  - o Amdocs case 150826-14746: eVo; TCPIP; TLS 1.x support for FTPS
- Amdocs case fixes:
  - o 150206-18785: Setup WPA2-EAP PEAP without need for CA certificate.
  - o 150805-12636 : CASE TITLE: Vx675 - BT base connection lost during runtime activity
    - Removed extra calls to OBEX pull to retrieve current cable status while PAN is connected.
    - This is a partial fix only. A Firmware update is needed for this issue to be fully resolved.

2.25 Significant Changes from Version 2.1.8.8 to 2.1.9.8

- Added support for aborting an on-going connect request.
  - o The following parameters can be set to enable/disable the support in aborting on-going connect request:
    - DDI parameter `INI_SUPPORTS_ABORT` – enables/disables the capacity to abort connect request on a specific network interface. Value can be set via CEIF API `ceSetDDParamValue()`.

- CE parameter `ABORT_CONN_REQ_ENABLE` – enables/disables the capacity to abort connect request for any network interfaces. Value can be set via CEIF API `ceSetParamValue()`. Valid values are:

    - 1: allow user to abort any on-going connect request regardless of `INI_SUPPORTS_ABORT` value using `ceStopNWIF()`/ `ceStopDialIF()`.

    - 0 (default): allow user to only abort on-going connect request of a particular network interface depending on the `INI_SUPPORTS_ABORT` value using `ceStopNWIF()`/ `ceStopDialIF()`.

  o Added the capacity to abort connection request for the following network interfaces:

    - CE_COMM_TECH_GPRS

    - CE_COMM_TECH_PPPGSM

    - CE_COMM_TECH_GSMONLY

    - CE_COMM_TECH_PPPDIAL

    - CE_COMM_TECH_DIALONLY

    - CE_COMM_TECH_PPPBT

    - CE_COMM_TECH_DIALBT

    - CE_COMM_TECH_WIFI

- Added options in dial only interfaces to be in INIT state when connection lost is encountered.

  o CE_DIALONLY_BLOCKING_DROP_TO_INIT

  o CE_DIALONLY_NONBLOCKING_DROP_TO_INIT

- Fixed the following Amdocs cases:

  o 151023-23967: eVo; How to have both Ethernet and GPRS connections open

  o 151216-13205: eVo FTPS connect failure

  o 160226-24898: Verix eVo DnsGetHostByName() exception

  o 160308-7312 : GPRS; Connection authentication not accepted

    o Add new GPRS DDI parameter: GP_PDP_CONTEXT_ACT - Boolean DDI parameter that toggles activation of GPRS PDP context. Default value is false; PDP context is not activated.

  o 160322-7419: Vx680 WIFI; system error on app restart; suspicion on WiFi profile

- o 160418-31508 : ceSwitchNWIF - Error switching from GSM CE_OPEN to GPRS CE_NETWORK
- o 160426-9077: EOS; Unable to determine Auto-Reconnect ended

2.26 Significant Changes from Version 2.1.7.5 to 2.1.8.8

- Added support for BGS2 firmware upgrade

- Added handling not to perform re-attachment whenever the following errors are received:
  - o Roaming Not allowed In This LA
  - o No Suitable Cells In Location Area

- CME error codes of GPRS/GSM AT commands are stored in nsParam3 of stDDI_EXT_Err structure.

- Fix for the following Amdocs Cases:
  - o 150626-22335: Vx690 Cannot Bind Socket To Ethernet Over Bluetooth Anymore
  - o 150916-12891: GPRS problems with multi-provider SIM cards
  - o 151022-18768: Vx675 BT; Dial up not working after going in and out of range.
  - o 151023-23967: Vx520; eVo; how to have both ethernet and GPRS connections open
  - o 151111-13580: GPRS; USIM support
    - ▪ Added new DDI INI parameters
      - o GP_CHKSIM_RET: The number of times to check SIM card for GPRS DDI drivers
      - o GS_CHKSIM_RET: The number of times to check SIM card for GSM DDI drivers
  - o 151111-13582: GPRS; PDP not deactivated after detach request
    - ▪ Added new DDI INI parameter GP_REATTACH: enable or disable re-attachment to network
  - o 151119-21460: Cannot share dial handle.
    - ▪ Added new CEIF API ceTransferDialIF() to transfer temporary ownership of the dial handle to another application.
  - o 151125-14997: GPRS; Disconnection issue
  - o 151217-16868: Vx675 BT; Failed Ethernet connection after unplug and plug the cable

- o 160111-1850: Vx820; EOS does not redial if ISDN dial failed
- Added SSL vulnerability fixes:
  - o Certificate verify crash with missing PSS parameter (CVE-2015-3194)
  - o X509_ATTRIBUTE memory leak (CVE-2015-3195)

2.27 Significant Changes from Version 2.1.6.0 to 2.1.7.5

- Merged with EOS 1.17.4.1
- Added ASL.VSA in the VxEOS manifest files.
  - o If present, run ADK system loader on power up. Refer to ADK release for details.
- Fix for the following Amdocs Cases:
  - o 151020-8585: Vx675 BT; BT Reconnection fail/delayed after going out/in coverage area
  - o 140925-14191: Vx680 BT; PORT OPEN FAILED after in/out range
  - o 150519-10773: eVo;Vx680 BT/WiFi crash
  - o 150625-18301: VX690 cannot connect to host after some idle time
  - o 151104-13702: EOS Application Name Mismatch
  - o 151202-15398: EOS; GSM Dial connect timeout
    - Modified GS_CONN_TO minimum value from 45000ms to 10000ms.

2.28 Significant Changes from Version 2.1.5.5 to 2.1.6.0

- Fix for the following Amdocs Cases:
  - o 151020-8575: Vx675 BT; State Machine Not Reacting Properly in CE_OPEN state
  - o 151020-8580: Vx675 BT; CE posts CE_EVT_STOP_CLOSE even w/ auto_reconnect enabled and RECONN_TO=0
  - o 151020-8582: Vx675 BT; CE polling GET_BASE_INFO too frequently
    - o 151020-8587: Vx675 BT : Dial Up not recovering INIT state when Base is Power cycled

2.29 Significant Changes from Version 2.1.4.3 to 2.1.5.5

- TCPIP library updates:
  - Amdocs case 150521-15425: eVo;Vx520; FTPS; Download issue when connected to a Linux server

- Amdocs case 150826-14746: eVo TCPIP TLS1.X support for FTPS
- Amdocs case fixes:
  - 150206-18785: Setup WPA2-EAP PEAP without need for CA certificate
  - 150819-39320: Vx675/680; GPRS roaming doesn't work correctly

2.30 Significant Changes from Version 2.1.3.7 to 2.1.4.3

- Fix for Amdocs Case 150305-17793: GPRS and GSM Dial UP comms - Time enhancement needed VX680:
  - Added new CE network parameter AUTO_RECONN_MAX to specify the number of retries when doing automatic reconnection. Default value is 3 to maintain backwards compatibility. Minimum value is 0, while maximum value is 30.
  - Added new DDI Parameter RADIO_SHUTDOWN to enable/disable performing radio restart during tiered reconnection when initial error is connection lost. Default value is true for backwards compatibility.
  - Added new parameter GPRS_GSM_SWITCH to ceSwitchNWIF(). This sets ceSwitchNWIF() to perform GPRS/GSM switching without performing radio shutdown. The expected paramValue is type stSW_GPGSSwitch. This sets which interface should EOS switch to and what is the expected target mode.
  - When switching, the value of neParam1 with CE_EVT_STOP _CLOSE will be CE_PENDING_GPGS_SWITCH. This can be used as an indicator that a ceSwitchNWIF() has been called and is being processed.
    - Added new CE network parameter AUTO_RECONN_DELAY to specify the delay in milliseconds before automatic reconnection recovery is performed. Default value is 0 to maintain backwards compatibility. Minimum value is 0, while maximum value is 60000.
- Fix for Amdocs Case 150706-2976: Vx675; dual sim switch failure.

2.31 Significant Changes from Version 2.1.1.4 to 2.1.3.7

- Updates for $Custom IC01344: Added support for retrieving the extended error string from GPRS/GSM radio when connection problems occur.

- o Added new application events GPRS_EXT_ERR and GSM_EXT_ERR. Event data is to be type-casted to stNI_NWIF_DDI _EXT_Err and will contain the error strings.

- o Added new network parameter NWIF_DDI_EXT_ERROR. Output parameter is to type-casted to stNI_NWIF_DDI _EXT_Err and will contain the error strings.

- o Added new network parameter CLEAR_DDI_EXT_ERROR to clear the last content of the extended error string.

- o Added new DDI parameter INI_EXT_ERR to enable/disable retrieval of extended error string from radio. Default value is false to maintain backwards compatibility.

- Fix for the following Amdocs Cases:
  - o 150525-3214: GSM signal issue

    - o Added new parameter CE_DIALONLY_INIT to ceSetDialMode(). This sets ceStartDialIF() to start the interface up to INIT only. Interface will remain in INIT until application calls ceStartDialIF() again with dial mode set to CE_DIALONLY_BLOCKING or CE_DIALONLY_ NONBLOCKING to establish full connection.

    - o Added new parameter CE_DIALONLY_HANGUP to ceSetDialMode (). This sets ceStopDialIF() to stop the interface up to INIT only when current state is full connection up. Interface will remain in INIT until application calls ceStopDialIF() again to fully stop the interface.

      - o 150617-13191: GPRS;Detach Request (Type: Re-Attach Required)

    - o Added support for sending AT+CGREG to radio to enable GPRS registration URC. New feature is enabled/disabled via new DDI parameter INI_GPRS_ PKTDREGISTRATION.

    - o Added new application events GPRS_CGREG_STATUS and GSM_CGREG_STATUS to send CGREG URC to applications.

    - o Added CE network parameter AUTO_RECONN_END_STATE to set the auto reconnection end state when all auto reconnection retries have been exhausted.. If value is 0, then EOS end state after reconnection retries will be NWIF_CONN_STATE_INIT. If the value is 1, then end state will be NWIF_CONN_STATE_OPEN, wherein the GPRS interface will remain attached and signal levels will still be received. The default value of this parameter will be 0 to remain backwards compatible.

      - o 150616-7558: EOS CommEngine; PDP Context Problems

  - o Same fix for Amdocs 150617-13191.

- o 150720-3627: CE; PDP Context activation reject from Base Station
- o Same fix for Amdocs 150617-13191.
  - o 150506-12349:eVo;Vx680; GET_SERVCELL_INFO return connection problem
  - o 150625-16902 : eVo; Vx690; Not Possible To Set PUK For SIM In Slot 2

2.32 Significant Changes from Version 2.1.1.4 to 2.1.2.0

- Fixed system crash during PPP tear-down on E315/E315M.

2.33 Significant Changes from Version 2.0.0.3 to 2.1.0.5

- Bluetooth enhancements:
  - o Added automatic detection of pairing method to use.
  - SSP with passkey is selected when pairing to Verifone base.
  - SSP with numeric comparison is selected for all other Bluetooth devices.
  - Limited support for SSP just works and legacy pairing:
    - o Allow SSP just works to Vx680/Vx675 BT base only.
    - o Allow legacy pairing to Dione base only.
  - BCP menus also updated with this changes
    - o Added wait for user confirmation when pairing method is SSP with numeric comparison.
- New parameter `INI_BT_SSP_CONF_EN` to enable/disable this feature.
  - o When false (default), `IOCTL_BT_PAIR` automatically selects "yes" when prompted for user confirmation. This is the default settings to maintain backwards compatibility.
  - o When true, `IOCTL_BT_PAIR` stops at waiting for user confirmation.
    - New IOCTL `IOCTL_BT_GET_PAIR_KEY` is called to retrieve the numeric code.
    - New IOCTL `IOCTL_BT_CONFIRM_PAIR` is called to complete the pairing operation.
- BCP menus also updated with this changes.

- o New `IOCTL_SET_BT_PAIRED_DEVICE` to update local information (EOS data only) from a paired device.
  - Operation is currently limited to updating only the friendly name.
    - o The following application events are added:
  - `BT_PAIR_DONE`: Sent when a pairing operation is completed.
  - `BT_SET_CONNECT_INFO_DONE`: Sent when a set connect info is completed.
  - `BT_PAIR_CANCELED`: Sent when a pairing operation is cancelled during wait for user confirmation.
- TCP/IP Multi-homing enhancements:
  - o New CE system parameter `MH_NW_PRIORITY` that contains the list of network interfaces priority used for DNS requests.
    - Network interfaces are entered as a comma-separated list with 1st item as network with highest priority and last item as network with least priority.
    - Names for each network will use the CommTech string of CE.
    - CE's network interface hierarchy and failover priority is independent from this parameter.
    - Via API, parameter is accessed using `ceSetParamValue/ceGetParamValue` calls.
    - Via config.sys, parameter is updated using parameter `multihoming.priority`.
    - Via INI (VXCESYS.INI) download: below is a sample entry for the file

      [MULTIHOMING]

      multihoming_priority=WiFi,Ethernet/BT,GPRS
- Removed support for displaying NCP, BCP and WCP in VxGUI mode.
- Added support for fetching SIM phone number.
  - o New IOCTL parameter for `IOCTL_GET_SUBS_OWN_NUM` to retrieve the subscriber's own number from the SIM.
    - Output parameter data type is the structure `ddi_subs_own_num`.
    - IOCTL may not always work. Response of the AT command is highly dependent on the SIM support.
- DESENSE enhancements:

- o New CE system parameter DE_SENSE to retrieve the DESENSE enable/disable settings.

- Fixed Amdocs Case 150219-17305: VX680; EOS; Missing CE Events.

2.34 Significant Changes from Version 1.17.1.0 to 2.0.0.3

- Update IP authentication of network interfaces to fallback to PAP authentication whenever CHAP authentication fails.

- Fix issue in GPRS where AT^SCID IOCTL response contains the AT command string "^SCID".

- Fix crash on ceStopNWIF() when DSIM_AUTO_SWITCH_MODE is set to DSIM_AUTO_SWITCH_MODE2.

- Fix for the following Amdocs Case:
  - o 141203-11397: Issue with vxgps.h.
  - o 150220-20471: ceGetDDParamValue(IOCTL_GET_ICCID) response.
  - o 150217-7848: DNS IP Address issue with multiple NWIF.

- Used SSL version 2.0.0:
  - o Initial port of OpenSSL 1.0.1j to Verix eVo Platform.
  - o This version of SSL library is not backward compatible with 1.x.x.x SSL library, which was based on OpenSSL 0.9.8n.
  - o TLS 1.2 support (RFC 5246).
  - o TLS 1.1 support (RFC 4346).
  - o TLS extensions support:
    - Server name indication (RFC 6066). Made TLS to work when same machine hosts, multiple virtual secure services with different DNS names.
    - Certificate status request (RFC 6066). Helps TLS clients to delegate OCSP to server. Useful in resource constrained clients.
    - TLS Renegotiation indication (RFC 5746). Facilitate to do renegotiation in the cryptographic context of an existing session.
    - Session ticket (RFC 5077). Helps TLS servers to do session resumption without keeping session states. Encrypted session state is distributed to clients in the form of a session ticket and allow the clients to submit the ticket back to the server.

- Heartbeat (RFC 6520). Helps TLS application to securely, check whether peer is alive.
  - CMS (Cryptographic Message Syntax) support (RFC 5652). Helps to digitally sign, authenticate or encrypt arbitrary messages.
  - Exposed following BN functions, which were not exposed in 1.x.x.x version (Building of Unit test option bntest, which used for testing BN operations, was failing because this functions were not exposed):
    - BN_kronecker
    - BN_mod_sqrt
  - Removed stat() API, from the list of exposed functions, to avoid conflicts with other libraries having stat() implementation.
  - Enabled OpenSSL Engine support, which enables the use of customizable   cryptographic modules specific to hardware or OS to be used for OpenSSL cryptographic operations.
  - Added "verixauthex", Engine which uses OS API's to get the terminal certificate from OS space, and uses OS API to do private key encryption without exposing the key to application.
  - Rolled in version fallback protection fix, to address SSL3.0 POODLE vulnerability (CVE-2014-3566) from OpenSSL 0.9.8zc.
  - Following CVEs addressed:
    - CVE-2014-3568
    - CVE-2014-3567
    - CVE-2014-3508.
  - Fixed the issue that latest SSL servers terminating connection, when SSLv23_client_method() is used in the SSL client application.

2.35 Significant Changes from Version 1.17.5.0 to 1.17.6.0

- Fix for Amdocs Case 160304-22398 : Vx820; ISDN connection problems
  - Added ATH in state_disconnect() to ensure connection is terminated properly.
  - Updated ATS16? command for retrieving error message.

2.36 Significant Changes from Version 1.17.3.0 to 1.17.4.1

- Fix for Amdocs Case 141218-14173 - IP dial download does not work over ISDN
  - Determined which port to use in monitoring DCD status.

2.37 Significant Changes from Version 1.17.3.0 to 2.2.0.23

- Merged with EOS 2.0.0.3.

- Merged with EOS 2.1.2.0.

- Bluetooth enhancements:

  o Added capability to filter search of remote Bluetooth devices. Only use the search name filter when `IOCTL_GET_SEARCH_CNT` together with `IOCTL_GET_SEARCH_RESULT` is performed.

    - New parameter `INI_SRCH_NAME_FILTER` to set the filter.

    - New IOCTL parameters are added:

      o `IOCTL_SET_TMP_SEARCH_FILTER`: Temporarily overwrite the search filter value from `INI_SRCH_NAME _FILTER`. Search filter reverts to INI by passing empty string.

      o `IOCTL_GET_TMP_SEARCH_FILTER`: Retrieve current value of temporary search filter

      o `IOCTL_SET_TMP_SEARCH_TO`: Temporarily overwrite the search timeout value from `INI_SRCH _TIMEOUT`. Search filter reverts to INI by passing empty string.

      o `IOCTL_GET_TMP_SEARCH_TO`: Retrieve current value of temporary search timeout

  o Save the unfiltered scan result in a dedicated variable that is not replaced until another scan is performed.

  o Added support for setting terminal as discoverable and accept incoming pair requests from remote device.

    - The following INI parameters are added:

      o `INI_BT_DISCOVERABLE_TO`: Set the time limit, in seconds, that terminal is discoverable.

      o `INI_BT_NAME`: When value is empty, BT driver will use its default friendly name. When value is set, the friendly name is updated with the set value.

    - New IOCTL parameters are added:

      o `IOCTL_BT_DISCOV` : To enable terminal discoverability.

      o `IOCTL_BT_SET_LOCAL_NAME`: The local friendly name is updated with the set value.

- Added new application event `BT_REQUEST_PAIR`. This is sent when a remote device is requesting to pair with the terminal, while terminal is discoverable.
  - Changed maximum search devices from 16 to 32.
  - Once scan is complete, immediately have the results(only MAC addresses) available to application via IOCTL. On each retrieval of friendly name, the scan result in memory is updated, and an application event `BT_QUERY_REMOTE_NAME_FOUND` with the friendly name info is sent for notification.
  - Added support for SPP incoming connection.
    - The following IOCTL parameters are added:
      - `IOCTL_BT_SET_SPP_SERVER`: Set SPP port as either client or server.
      - `IOCTL_BT_SET_SPP2_SERVER`: Set SPP2 port as either client or server.
      - `IOCTL_BT_GET_SPP_SERVER`: Get SPP port setting if client or server.
      - `IOCTL_BT_GET_SPP2_SERVER`: Get SPP2 port setting if client or server.
      - `IOCTL_BT_GET_SPP_SVR_DEVICE`: Get the connection information for the SPP server port.
      - `IOCTL_BT_GET_SPP2_SVR_DEVICE`: Get the connection information for the SPP2 server port.
    - Added new application events:
      - `BT_SPP_SERVER_CONNECTED`: This is sent when a remote device has connected to an opened SPP server port.
      - `BT_SPP_SERVER_DISCONNECTED`: This is sent when a remote device has been disconnected from the SPP server.
- Wi-Fi Enhancement :
  - Do not allow connection modes that do not provide data encryption.
- SSL updates :
  - SSL2.LIB upgraded to latest Openssl library 1.0.1m in 1.0.1 branch.
  - SSL.LIB upgraded to latest Openssl library 0.9.8zf in 0.9.8 branch.

2.38 Significant Changes from Version 1.17.2.3 to 1.17.3.0

- Fix for Amdocs Case 150219-17305 - VX680; EOS; Missing CE Events
  - Added double checking of states in CE to ensure proper current and target state is used.

2.39 Significant Changes from Version 1.17.1.0 to 1.17.2.3

- Fix for the following Amdocs Cases:
  - 150220-20471: ceGetDDParamValue(IOCTL_GET_ICCID) response
    - Removed "SCID:" string from the IOCTL response.
  - 150217-7848: DNS IP Address issue with multiple NWIF
    - Ensured that TCPIP only uses connected NWIFs for DNS resolution.
  - 150226-16588: Vx675; WiFi/BT; Wi-Fi cannot connect to Enterprise WLAN, Auth time-out error
    - Added support for EAP PEAP without need for CA certificate.
  - 150206-18785: Vx680; how to setup WPA2-EAP Wi-Fi network.
    - Added support for EAP PEAP without need for CA certificate.
  - 141118-6705: eVo; Vx680 3G; PPP Auth Failed on 50 units
    - Added new Boolean parameter GP/GS_NOSIM_ERR to configure the error code and error string during a no SIM failure.
      - When True (default), error code and string will remain as E_DDI_NO_SIM and "No sim card detected". Automatic recovery is not performed.
      - When False, error code and string will be E_DDI_ NETWORK_DISCONNECTED and "Network disconnected". With this, automatic recovery is performed.
    - Added new Boolean parameter GP/GS_PORT_FAIL_RESTART to configure port open fail behavior. This parameter determines how EOS will behave when open(COM2) fails with a return value of -9.
      - When True: EOS will call SVC_RESTART.
      - False: Error code and string will be E_DDI_PORT_FAILURE and "Port fail – Restart!". For this scenario, it is up to the application to call SVC_RESTART.
    - Added new parameter GP/GS_OPEN_DELAY to set a delay before calling open for COM port. Default value is 0 which disables the feature. Minimum value is 0 and maximum value is 65,000 milliseconds.

- Added new parameter GP/GS_CLOSE_DELAY to set a delay after calling close for COM port. Default value is 0 which disables the feature. Minimum value is 0 and maximum value is 65,000 milliseconds.

- After opening the COM port, added wait for ^SYSSTART message from the radio before sending the first AT command.

- Updated "No battery detected" error string to "Radio Power Failure" when no radio power is detected.

- Fixed crash on ceStopNWIF() when DSIM_AUTO_SWITCH_MODE is set to DSIM_AUTO_SWITCH_MODE2.

- Update PIN check failure error code to E_DDI_SIM_PIN_CHECK_FAIL – "SIM PIN check error". This is for automatic recovery purposes in EOS.

- Ensure that radio power-up is only done for the MC55i chip.

2.40 Significant Changes from Version 1.17.0.3 to 1.17.1.0

- Added support for Vx805 CTLS with USB modem dongle.
  - Communication using the modem dongle is provided as dial interfaces.

- Fixes for the following issues:
  - Issue of getting the BT base info via IOCTL failing.
  - Issue of incorrect response to AT^SCID via IOCTL.

2.41 Significant Changes from Version 1.16.1.6 to 1.17.0.3

- Added a new feature that detects BT Ethernet cable status (for Vx690 terminals only).

- Updated VXEOS and NCP to use the best SSL protocol version in download operations.

- Amdocs case fix:
  - Case 141117-4804 -Device not operable in Vx520 3G radio.

2.42 Significant Changes from Version 1.16.0.6 to 1.16.1.6

- Added a new feature manual network registration option for GPRS/GSM.
  - Added the following DDI parameters to configure network registration.

- GP_REG_MODE / GS_REG_MODE: Set the network registration mode. Valid values:
    - 0: Disable. (default)
    - 1: Automatic registration. Radio searches for the operator.
    - 2: Manual registration, and operator name is retrieved from SIM(<MCC><MNC> from IMSI).
    - 3. Manual registration, and operator name is retrieved from parameter.
    - 4. Manual registration, operator name is retrieved from SIM(<MCC> from IMSI and <II> from ICCID).
- GP_REG_OPNAME / GS_REG_OPNAME: Contains the operator name in numeric format to use when GP_REG_MODE or GS_REG_MODE is set to 3
- GP_REG_OPNAME1 / GS_REG_OPNAME1:
- GP_REG_OPNAME2 / GS_REG_OPNAME2:
- GP_REG_OPNAME3 / GS_REG_OPNAME3:
- GP_REG_OPNAME4 / GS_REG_OPNAME4:
- GP_REG_OPNAME5 / GS_REG_OPNAME5:
    - These parameters would allow applications to define the operator name to be used in AT+COPS when GP_REG_MODE or GS_REG_MODE is set to 4.
    - This is defined as a comma separated list of strings.
    - First string in the list is the operator name to be used in AT+COPS.
    - The rest of the strings are the different decoded operator name from CIMI and SCID.
    - When using REG_MODE 4, it is not required to use all OPNAME1-5. It would depend on how many operator names the application wants to define.
    - Example: GP_REG_OPNAME1 = 46000,46002,46007,4600X,4600Y,4600Z
- GP_REG_MNC_TYPE / GS_REG_MNC_TYPE: This parameter sets the type of MNC to either European or North American standard. Valid values:
    - 1: European

- 2: North American
  - o Added new IOCTL parameters.
    - IOCTL_GET_PREF_NET_LIST: Response is the list of preferred networks.
    - IOCTL_GET_AVAIL_NET: Response is the list of available networks.
- Added implementation for event resend mechanism. This enhancement is for EOS to resend the events that will be stored when pipe write fails due to pipe queue is full.
  - o Added the following system parameters to configure event resend.
    - EVENT_RESEND_INTERVAL: Set the interval in milliseconds of each resend operation.
      - Min: 500
      - Max: 30,000
      - Default: 1,000
    - EVENT_RESEND_TO: Set the total time, in milliseconds, that the resend operation is performed. The event is dropped when this timeout occurs and the resend is still failing.
      - Min: 5,000
      - Max: 180,000
      - Default: 10,000
    - EVENT_RESEND_MAX: Set the total number of failed events that will be stored for resending. When the storage is full and a new event has failed to send, the oldest event in the storage will be dropped to provide room for the new event.
      - Min: 0 (Disable – Default)
      - Max: 20
- Updated minimum battery threshold to 0.
- DEV_BLUETOOTH device will just be left open from the time Bluetooth operation is used by the application.
- Amdocs case fixes:
  - o Case 141016-16424: Vx675 losses Ethernet and PPP Dial from Comm Idle list in NCP.

- o Case 141119-14059: Auto reconnect not happening for attach failure.
- o Case 141121-22025: Vx680BT; Eth restore Error when terminal on base -Port Open Fail.
- o Case 140925-14191: Vx680BT; Port Open Fail when disconnected from Android AP.
- o Fixed issue where EOS reports a "no battery detected" error when the GPRS radio is powered off.

2.43 Significant Changes from Version 1.15.2.6 to 1.16.0.6

- Merged the following EOS releases:
  - o 1.11.4.10
  - o 1.12.1.2
- Added a new feature silent mode radio firmware update.
  - o *UGPHS8FW=2: Do PHS8 radio firmware update without user intervention.
  - o *UGMC55IFW=2: Do MC55IW radio firmware update without user intervention.
- Amdocs case fix:
  - o Case 131213-20456: Dual SIM switching does not happen when the active SIM encounters an error.
- Fixes for the following issues:
  - o System crash caused by RAT selection feature on non GPRS terminals.
  - o Download is not working when using URL.
  - o Pairing not working with VFI only set to true.
- Enhanced EOS to add config.sys params *NO.VXBT=1, *NO.VXBTE=1 and *NO.VXWIFI=1 if the terminals does not support Bluetooth / Wi-Fi.
- Added notification to applications when SIM Switching is happening using CE_EVT_DDI_APPL event and populating neParam1 with type of reconnection.

2.44 Significant Changes from Version 1.15.1.6 to 1.15.2.6

- Merged the following EOS releases:
  - o 1.13.1.4

- o 1.10.6.0
- Failover enhancements:
  - o Added new CEIF API, ceSwitchNWIF(), to start up the primary network interface and stop the failover network interface.
  - o Use FAILOVER_RESTORE_PRI as the first parameter.
  - o Added a new parameter FAILOVER_FROM_PRI to be used by CEIF API ceSet/GetParamValue() to configure the failover process.
    - 0: Start the failover process from the primary interface. (default)
    - 1: Start the failover process from the highest priority (round-robin)
  - o Added sending of error code for poor or no network when interface is torn down due to failover.
  - o Failover to go through regardless of failover interface state.
  - o Failover to go through even though interface is busy processing other start requests.
  - o Failover interface to start while current interface is being torn down.
- Added sending of extended error code E_DDI_BASE_NO_POWER_OR_OUT_OF_RANGE when BT AP out of range or no power is detected.
- Added support for Wi-Fi EAP-TLS authentication without the following network profile parameters:
  - o Identity
  - o Private key
  - o Private key password
- Fixes for the following issues:
  - o Vx675 Full Feature Base NWIF was removed after restart.
  - o Incorrect status of EOS failover processing when last interface fails.
  - o System crash is encountered when radio firmware update is performed while all media are present in NCP.
  - o System crash is encountered when printing of extended ASCII characters.
  - o Error printing occurred when SSID contains extended ASCII characters.

- o CE_EVT_NET_FAILED error is encountered when TKIP cipher is used.
- Amdocs case fixes:
  - o Case 140902-5915: Vx680 BTAP bridge does not reconnect after FW upgrade.
  - o Case 140616-1717: Vx680WB terminal crashes after special chars in "Scan network".
  - o Case 140117-19886: In Vx675G, IOCTL_GET_RSSI_ABS will block after wake up from deep sleep.
  - o Case 140303-2203: TCP transactions recover slowly after Wi-Fi roaming.

2.45 Significant Changes from Version 1.15.0.14 to 1.15.1.6

- Fixes for the following issues:
  - o EOS encounters SFDL no response fail during Radio FW update.
  - o TCPIP failure occurs when doing failover from GPRS to Wi-Fi.
  - o BT OS driver initialization fails when Wi-Fi is set to automatic start mode.
  - o Users can set the delay (0 to 120000ms)of Wi-Fi auto start thru the following options:
    - Via API, ceSetNWParamValue(AUTO_DELAY)
    - Via INI, use a key name "auto_delay" with key value
    - Via config.sys, use the parameter "WIFI.auto_delay"
  - o System crash occurs during SEND_PDU IOCTL call.
  - o IOCTL_SET_NW_PROFILE is successful with mismatched WEP Key Index.
  - o Country code cannot be reset to empty (default).
  - o EOS gets stuck in a no network state even if there are signal events.
  - o EOS not handling the psinfo URC in no/poor network.
  - o System crash when the BT OS driver fails to initialize.
  - o EOS failing to detect the Wi-Fi AP Netgear WNDR3700 when using WPA authentication. Network up also fails because of this issue.
  - o EOS failure due to BT port not set.
  - o EOS failing to send Wi-Fi/GPRS signal notifications when both interfaces are running simultaneously.

- Updated NCP to support Vx690 menu options.

- In WCP, updated the time delay at the end of the scan operation to a fixed value of 1.5 seconds. The delay allows the user to see the progress bar at 100% before going to the next screen.

- Changed the mapping of RSSI percentage signal values for GPRS and GSM network interfaces. This gives a more accurate value when signal level is less than 5.

- New SSL version 1.2.6.1 with the following updates:
  - Rolled in SSL/TLS MITM vulnerability (CVE-2014-0224) fix from OpenSSL 0.9.8za: An attacker using a carefully crafted handshake can force the use of weak keying material in OpenSSL SSL/TLS clients and servers. This can be exploited by a Man-in-the-middle (MITM) attack where the attacker can decrypt and modify traffic from the attacked client and server.
  - Fixed Amdocs Case 140318-10633: eVo; EOS SDK and libposix symbol clash. Removed stat() API from the list of exposed functions to avoid conflicts with other libraries with stat() implementation.

2.46 Significant Changes from Version 1.14.0.22 to 1.15.0.14

- Merged the following EOS releases:
  - 1.14.0.22
  - 1.13.0.18
  - 1.11.2.4

- Added support for Vx690 Wi-Fi/GPRS/BT Combo.

- Added support for Wi-Fi 5 GHz.

- Added support for multi-homing.

- Added new TCPIP library 1.2.1.2.

- Four network interfaces simultaneously UP is now supported, even when BT and Dial interfaces are started.

- Added support for configuring the maximum number of event notifications that can be queued while application is not yet calling ceGetEvent().
  - via config.sys parameter *EOSCPMAX in same GID of application.
  - via API ceSetParamValue(EVENT_PIPE_MAX). This takes higher precedence than via config.sys and does not update the config.sys variable.

- o Default value is 10. Minimum is 4. Limit for maximum value is not set.
- o User will need to call this before calling ceEnableEventNotification() and fine tune the value until the issue no longer occurs.
- Fixes for the following issues:
  - o Fixed issue of "BT Port not set" when full download is performed.
  - o Fixed issue of EOS failing to send event notifications to applications when application is not calling ceGetEvent() as often as needed.
  - o Fixed issue of VeriFone bases not detected in an area with many Bluetooth devices present even when the VFI only filter is enabled.
- Fix for the following Amdocs cases:
  - o 130621-20335: eVo; EOS 1.10.1.9 issue (issue is focused on "no-NWIF indicated on Vx805-CTLS when using cable without Ethernet.)
  - o 131004-22803: Vx520; Modem; Communication issues in north Morocco.
  - o 131202-4400: eVo; Vx520C; PSTN line sharing issue.
  - o 140225-6969: eVo; Vx680 Wi-Fi loses SSID.
  - o 140303-2313: eVo; Vx520G; dialup failures after upgrading to ReVD.
  - o 140312-14180: eVo; EOS 1.11.2 freeze on flat-dir OS.
  - o 140319-14570: eVo; Vx520; EOS v1.11.2.4; Port configurations not saved.

2.47 Significant Changes from Version 1.11.0.4 to 1.14.0.22

- Merged the following EOS releases:
  - o 1.11.0.4
  - o 1.10.5.6
  - o 1.2.1.0
- Added support for Vx690.
- New dial interfaces Serial/BT and Serial2/BT.
- Implemented faster dynamic memory free.
- Added connection failover.
- Updates to NCP:

- o Added "Connected NWIF" to the Communication Technology on Idle menu.
- o Added "TCPIP" to the Setup menu to configure TCPIP config.sys parameters.
- o Added "Advanced Setup" to the FTP menu to configure FTP config.sys parameters.

- Bluetooth enhancements:
  - o Added recreate of link key during pairing when device is already previously paired.
  - o Added close() when redial fails during reconnection.

- Fix for the following Amdocs cases:
  - o 131023-12905: Vx680BT-ETH with the Bluetooth base communication problem.
  - o Fixed issue of Ethernet/BT failing when start-up setting is AUTO and debug log is disabled
  - o 131213-17816: eVo; Vx680 3G Dual SIM; No NCP reporting for SIM in Slot 2

- New SSL version 1.2.5.1 that fixes the following vulnerability reports:
  - o CVE-2010-3864
  - o CVE-2006-7250
  - o CVE-2012-1165
  - o CVE-2012-2110
  - o CVE-2013-0166

2.48 Significant Changes from Version 1.13.0.18 to 1.13.1.4

- Removed support for user-defined passkey in Bluetooth pairing. Value of passkey is now limited to using computed value from the terminal's serial number.

- Updated Wi-Fi DDI IOCTL for scan and network profile operations to still succeed even when Wi-Fi DDI is busy.

2.49 Significant Changes from Version 1.11.0.4 to 1.13.0.18

- Merged the following EOS releases:
  - o 1.11.0.4
  - o 1.10.5.6

- o 1.2.1.0
- Added support for Vx675 Wi-Fi/BT.
  - o New dial interfaces Serial/BT and Serial2/BT.
- Implemented faster dynamic memory free.
- Added connection failover.
- Updates to NCP:
  - o Added "Connected NWIF" to the Communication Technology on Idle menu.
  - o Added "TCPIP" to the Setup menu to configure TCPIP config.sys parameters.
  - o Added "Advanced Setup" to the FTP menu to configure FTP config.sys parameters.
  - o Added support for resumable download. When files for download are set as exclusive in VeriCentre, the resumption download on power cycle is continued by VXEOS.OUT.
- Fix for the following Amdocs cases:
  - o 131023-12905: Vx680BT-ETH with the Bluetooth base communication problem.
  - o Fixed issue of Ethernet/BT failing when startup setting is AUTO and debug log is disabled.
  - o 131112-9240: eVo; Vx680 Wi-Fi; Unable to set default SSID if the SSID contains lowercase char Lowercase characters can be recognized by enclosing in '/*' and '*/' delimiters.
  - o 140114-8208:eVo; Vx680; System Error Crash on device left over the weekend.
  - o Fixed issue of memory leak that leads to crash using Wi-Fi interface.
- New SSL version 1.2.5.1 that fixes the following vulnerability reports:
  - o CVE-2010-3864
  - o CVE-2006-7250
  - o CVE-2012-1165
  - o CVE-2012-2110
  - o CVE-2013-0166
- TCPIP library updates:
  - o Removed "MaxBatch" logs.

2.50 Significant Changes from Version 1.12.0.7 to 1.12.1.2

- Fix for the following Amdocs cases:
    - 140522-15020: EOS failed to process NWIF stop when an un-expected PPP link disconnection is encountered.
    - 140303-2203: TCP transactions recover slowly after Wi-Fi roaming.
    - 140225-6969: WPA_SUPPLICANT.CONF file becomes corrupted.
    - 140114-8208: Wi-Fi memory leak initial issues.
    - 140318-10633: eVo; EOS SDK and libposix symbol clash.
- SSL library updates:
    - Rolled in SSL/TLS MITM vulnerability (CVE-2014-0224) fix from OpenSSL 0.9.8za: An attacker using a carefully crafted handshake can force the use of weak keying material in OpenSSL SSL/TLS clients and servers. This can be exploited by a Man-in-the-middle (MITM) attack where the attacker can decrypt and modify traffic from the attacked client and server.
    - Removed stat() API, from the list of exposed functions, to avoid conflicts with, other libraries with stat() implementation.

2.51 Significant Changes from Version 1.11.0.4 to 1.12.0.7

- Added support for IC00649 and IC00724 - ISDN USB Dongle
- Merged EOS 1.10.2.3.

2.52 Significant Changes from Version 1.11.3.2 to 1.11.4.10

- Added support for selecting Radio Access Technology (RAT) based on signal strength.
- Added ceManualRatSelection() API in CE to initiates selection of RAT based on signal strength or by selecting specific network (i.e. 2G or 3G).
- Added support for Ping Check to determine whether there is a connection to a specific IP address and also prevent network idle state.
- Changed mapping of RSSI-percentage signal values for GPRS and GSM NWIFs. This will provide more accurate value for RSSI value less than 5.
- NCP enhancements:
    - Modified idle screen to display "2G" or "3G" instead of just "GPRS" to show the current access technology of the connection.

- o Added User Interface option to setup radio signal format to display actual RSSI value or its corresponding percent value.

- o Modified Terminal Info menu for GPRS and PPP/GSM to move up the following information in the display order:

  - GPRS: GP_APN, GP_APN2 and GP_PRIMARY

  - PPP/GSM: GS_PRIMARY

- o Made GPRS and PPP/GSM driver setup update easier by moving up the following parameters in the display order:

  - GPRS: GP_APN, GP_PRIMARY, GP_MONITOR, GP_SIM_PIN, GP_SIM_PIN2, GP_SIM_PUK, GP_SIM_PUK2, and GP_MINRSSI

  - PPP/GSM: GS_PRIMARY, GS_SIM_PIN, GS_SIM_PIN2, GS_SIM_PUK, Gs_SIM_PUK2, and GS_MINRSSI

- o Modified Network Maintenance header for GPRS and GSM to display the currently used SIM slot number.

- Fixed Amdocs Case 140601-991: Unable to consistently obtain GPRS signal in poor coverage areas using Jasper Optus SIM.

  - o Re-set original timeouts before sending AT Commands, specifically INIT strings.

- Fix for the following issues:

  - o CE start fails without reason after occurrence of "Insufficient Resources" error when AUTO_RECONNECT is set to 0.

  - o EOS gets stuck in NO network, even if there are signal events.

  - o EOS not handling psinfo URC in no/poor network.

  - o System crash when the BT OS driver fails to initialize.

  - o EOS failure due to BT port not set.

- SSL library updates:

  - o Rolled in SSL/TLS MITM vulnerability (CVE-2014-0224) fix from OpenSSL 0.9.8za: An attacker using a carefully crafted handshake can force the use of weak keying material in OpenSSL SSL/TLS clients and servers. This can be exploited by a Man-in-the-middle (MITM) attack where the attacker can decrypt and modify traffic from the attacked client and server.

  - o Removed stat() API, from the list of exposed functions, to avoid conflicts with, other libraries with stat() implementation.

2.53 Significant Changes from Version 1.11.2.4 to 1.11.3.2

- Merge the following EOS versions:
    - EOS 1.2.1.0
    - EOS 1.10.5.6
- Added fixes for the following Amdocs Cases:
    - 130621-20335: Updated CE to continue to run and respond to CEIF API calls even if no communication device is present in the terminal.
    - 131004-22803: Fixed CE issue returning ECE_DEVBUSY (-1020) when calling ceStartDialIF() after using PPP/Dial NWIF.
    - 131202-4400: Fixed issue in aborting call when connect timeout is encountered.
    - 140114-8208: Fix memory leak that causes system crash when using Wi-Fi NWIF for a long period of time.
    - 140303-2313: Fixed slow performance issue in closing dial modem on Vx520G RevD.
    - 140312-14180: Updated eos.out to avoid running of .VSA applications to fix terminal hang issue on flat-dir OS (qtxx00xx).
    - 140319-14570: Updated NCP to fix the issue of saving port configuration on download menu.
    - 140225-6969: Fixed issue where Vx680 Wi-Fi loses SSID.
- Added saving GID1 config variable *EOSDESENSE in I:46/DESENSE.INI to prevent unnecessary deletion when clearing all files from the terminal.
- NCP updates:
    - Updated to support resumable download. Halted download will be resumed on terminal restart.
    - Added support for VHQ Agent UI.
- GPRS/3G support updates:
    - Updated handling of "Network attach failure" to critical failure, instead of "No network". To reconnect, applications needs to start the NWIF again or use RECONN_MAX parameter for EOS to automatically retry to connect to the network.
    - Added reconnection retries using CONN_RET when ATD*99***#1 command fails with 0 response to activate PDP context.
- TCP/IP Stack Support for External Devices: Updated CE to create tcpstack.ini in app's GID RAM if file is not present. It is now optional for applications to download tcpstack.ini file.

- Added support for configuring the maximum number of CE event notifications that can be queued in the application.
    - Default value is 10. Minimum value is 4.
    - Limit for maximum value is not set. User will have to fine-tune the value until the issue no longer occurs.
    - Added config.sys variable *EOSCPMAX that is defined in the same GID as the application.

2.54 Significant Changes from Version 1.11.1.9 to 1.11.2.4

- GPRS enhancements:
    - Added retry of setting PDP context.
    - Fixed issue of URC for RSSI getting disabled during incremental network up.
    - Removed checking of license for GPS FE.
- Fixes for the following Amdocs Cases:
    - 131023-12905: China issue: when *Debug=0, port open fail error is encountered (Ethernet over BT).
    - CE checks first if BT DDI is initialized before starting other BT interfaces.
    - 131112-9240: eVo; Vx680 Wi-Fi; Unable to set default SSID if the SSID contains lowercase char.
        - Added APIs getLowerEnv() and convertLower() in Wi-Fi stack class to handle case sensitivity in getting SSID from config.sys.
    - 131114-16624: eVo; EOS; CommEngine extended connection status
        - Added DDI error E_DDI_REGISTRATION_DENIED for registration failure.
        - Added DDI error E_DDI_SIM_PUK_FAIL for incorrect PUK input.
    - 131213-17816: No NCP reporting for SIM in Slot 2.
    - 131229-1608: eVo; Vx680; RevC-RevD / EOS not able to connect GPRS network
- New SSL version 1.2.5.1 that fixes the following vulnerability reports:
    - CVE-2010-3864
    - CVE-2006-7250

Verix eVo for ARM-11

VeriFone Confidential

- CVE-2012-1165
- CVE-2012-2110
- CVE-2013-0166

2.55 Significant Changes from Version 1.11.0.4 to 1.11.1.9

- Merged EOS 1.10.4.1 (Amdocs Case Fixes).
- Added support for Vx680 with MC55i-W GPRS module.
- Added debug logs during network initialization:
  - Return value of SVC_INFO_DEV_TYPE(INFO_PRES_GPRS)
  - GPRS module identification (ATI)
- Added support for firmware update of MC55i-W GPRS module.

2.56 Significant Changes from Version 1.10.1.9 to 1.11.0.4

- Added support for Vx675 Full-feature base.
- Added DDI IOCTL_GET_RADIO_MDL to retrieve GSM/GPRS radio model.

NOTE: On terminal with GPRS and Conexant dial modem, GPRS/GSM radio and GPS interference issue is observed when dial modem is open. This may affect GPRS performance and GPS may not work. Kindly avoid using GPRS/GPS and dial modem at the same time.

2.57 Significant Changes from Version 1.10.5.6 to 1.10.6.0

- Fix for Amdocs Case 140601-991: Unable to consistently obtain GPRS signal in poor coverage areas using Jasper Optus SIM.
- Changed attach failure handling in GPRS. Instead of a no network event, network failure will be sent.

2.58 Significant Changes from Version 1.10.4.1 to 1.10.5.6

- Fix for the following issues:
  - EOS gets trapped in a busy state when DCD becomes low during PPP up. All CEIF calls will return ECE_START_STOP_BUSY (-1037).
    - Added log of AT+CEER response when DCD becomes low.
  - EOS gets trapped in a busy state when the TCPIP OpenInterface() returns 0 instead of the expected -1.

- o RSSI notification gets disabled when interface is started incremental.
- o AT+CGDCONT will sometimes fail. Fix is to retry the AT command 2 times.
- TCPIP library updates:
  - o Removed "MaxBatch" logs.

2.59 Significant Changes from Version 1.10.3.1 to 1.10.4.1

- Fix for Amdocs Case 130714-1252: eVo; Vx680 GPRS; Connection lost after 10-15 minutes idle.
  - o Added new DDI parameter GP/GS_POWER_SAVE
    - Toggle to enable / disable power save mode.
    - Valid values:
      - TRUE: (Default) Radio power saving is enabled.
      - FALSE: Radio power saving is disabled. Battery life will be affected when power saving is disabled.
- Updated handling of connection lost while establishing TCPIP connection. EOS will no longer wait for TCPIP to fail once connection lost has been detected.
- Fixed issue of EOS reporting no signal instead INIT failure when either SIM is not present or SIM PIN/PUK is incorrect.
- Fixed issue of SIM switching taking extra 10 seconds compared to EOS 1.10.1.9.

2.60 Significant Changes from Version 1.10.2.3 to 1.10.3.1

- Fix for Amdocs Case 130925-10979: Vx680 3G connection issues.
  - o Updated EOS to send AT^SDPORT=3 only when communication to COM9 is failing.

2.61 Significant Changes from Version 1.10.1.9 to 1.10.2.3

- Fix for the following Amdocs cases:
  - o 130724-12447; GPRS performance Vx520G vs. Vx520G-CTLS.
    - Improved performance of sending AT commands.
  - o 130715-2333: eVo; VX680; GPRS reconnection problems.
    - Added new network parameter NET_OUT_RECONN_INTERVAL.

▪ When terminal is in a no network area for the defined interval in minutes EOS assumes data link became invalid. EOS will perform data link and PPP link reconnect when terminal moves back to area with network.

o 130619-9371: eVo; Vx680 Wi-Fi: Unable to reconnect after going in/out range.

o 130730-7837: eVo; Vx520; Unable to retrieve modem version information.

- Added support for IOCTL_GET_FW_VERSION and IOCTL_GET_MODEL_ID to dial devices drivers.

o 130920-22989: eVo;Vx680 WIFI; Unable to Connect to Hidden SSID when profile is not set to default.

o 130920-23145: IOCTL_DSIM_GET_USED issue - Incremental connection.

o 130920-23450: eVo; Secondary SIM fail to connect when Primary slot set to 2.

o 130925-10979: eVo; Vx680 3G; GPRS connection fails under 80% battery charge

- Device Manager not responding

- Complete solution requires update in OS

- EOS fix: Verify that port is closed before opening the port.

- As for USB interface requirements, added 1 second delay before opening port for PHS8 DDI drivers.

2.62 Significant Changes from Version 1.10.0.4 to 1.10.1.9

- Fix for issue on IP set-up being set to static once connected, even when DHCP was selected.

- Fixes for the following Amdocs Cases:

o 130107-2264: VX680BT; Terminal hangs up irreparably

- Solution requires update in BT AP firmware, BT driver and EOS

- EOS fix: Fixed issue of ceGetDDParamValue(IOCTL_GET_BTBASE_INFO) returning timeout ECE_TIMEOUT (-1007) when terminal connected via Ethernet/BT is under heavy network traffic.

o 130516-13111: eVo; Vx520; VxCE.out will exit during starting

- Added file size checking of VXCEHW.INI.
  - o 130424-11673: GPRS cannot register after change NET status from CE_NET -> CE_LINK -> CE_OPEN
  - o 130719-19947; eVo; Vx680 3G; 30 sec to connect/disconnect PPP over GPRS.
  - o 130724-12447; GPRS performance Vx520G vs. Vx520G-CTL
    - Added new DDI param GP/GS_REG_WAIT
      - ▪ Toggle to enable / disable checking of registration status before checking radio signal
      - ▪ Valid values:
        - ★ TRUE: (Default) DDI will send "AT+CREG?" to check if registered to network. If not registered, signal will be set to unknown. If registered, actual radio signal will be returned.
        - ★ FALSE: DDI will no longer issue "AT+CREG?" and will return actual radio signal.

2.63 Significant Changes from Version 1.8.2.5 to 1.10.0.4

- Merge EOS 1.9.1.2.
- Added support for Vx520-3G terminal.
- Fixes for the following Amdocs Cases:
  - o 130429-3307: eVo; GPS API hangs if no SIM card is present

NOTE: On Vx520 3G terminal, GPRS/GSM radio and GPS interference issue is observed when Dial modem is open. This may affect GPRS connection and GPS may not work. Kindly avoid using GPRS/GPS and dial modem at the same time.

2.64 Significant Changes from Version 1.9.0.5 to 1.9.1.2

- Updated Wi-Fi IOCTL_GET_FW_VERSION to return the Wi-Fi OS driver version instead of the radio firmware version.
- Fixes for the following Amdocs Cases:
  - o 130318-1479: eVo; Vx680 Wi-Fi; Static IP address not retained after a power cycle on EOS release 1.8.0.13.
  - o 130326-7763: eVo; Vx520 Ethernet; EOS 1.8.0.13 losing static IP configuration.
  - o 130328-14608: eVo; Vx520G EOS ver 1.8.0.x Static IP Mode.

- o 130319-5814: Vx680 Wi-Fi - Device does not auto-reconnect to wireless AP if the AP is restarted.
- o 130115-5219: VX680 Wi-Fi: CommEngine log should not try to print WEP keys as ASCII.
- o 120918-6017: eVo; EOS; CommEngine state machine seems not to work properly.

2.65 Significant Changes from Version 1.8.0.13 to 1.9.0.5

- Merge EOS 1.4.6.0 and 1.7.3.0.

- Added support for XPBS019 Dione base station.
  - o BT/Ethernet uses PPP with no authentication. Setting the PPP authentication type, username and password has no effect on the connection.

- $Custom IC00447: Added 2 second display of last key input in NCP password entries.

- Fixes for the following Amdocs Cases:
  - o 130118-17975: eVo; EOS DIAL does not handle IOCTL_GET_CONNECTION_BAUD.
  - o 121212-11505: eVo; Vx680GPRS will lost connection during receiving data.
  - o 130123-8912: eVo; Vx680 BT; unable to retrieve Default Wi-Fi Profile.
    - - Added IOCTL_GET_DEFAULT_PROFILE for retrieving the default Wi-Fi profile.
  - o 130212-6683: NCP does not recognize GID1 customization.
  - o 120430-2082: eVo; Vx680 BT/Wi-Fi: ceSetDDParamValue(IOCTL_GET_RSSI_***) confusion.

2.66 Significant Changes from Version 1.8.1.1 to 1.8.2.5

- Added PHS8 3G radio firmware update support:
  - o In VXEOS.OUT, via firmware files in GID 46.
  - o In NCP, via firmware files in USB flash drive.

- Added setting of *FTPRCVBUF in NCP FTP menu.

- Added setting of *ZH and *ZB in NCP Download menu.

- Updated HS_NETWORK usage so that radio command for network selection is only performed when HS_NETWORK is modified or when terminal is restarted.

- Added wait for radio shutdown to complete after AT^SMSO call when DDI parameter GP_SHUTDWN/GS_SHUTDWN is enabled.

- Fixes for the following Amdocs Cases:

  - 130212-6683: NCP does not recognize GID1 customization.

  - 120430-2082: eVo; Vx680 BT/Wi-Fi: ceSetDDParamValue(IOCTL_GET_RSSI_***) confusion.

  - 121019-18577: The code change removes a race condition that would miss a timer event when using select() with timeout or recv() with blocking timeout.

  - 120918-6017: eVo; EOS; CommEngine state machine seems not to work properly.

  - 130318-1479: eVo; Vx680 Wi-Fi; Static IP address not retained after a power cycle on EOS release 1.8.0.13.

  - 130326-7763: eVo; Vx520 Ethernet; EOS 1.8.0.13 losing static IP configuration.

  - 130328-14608: eVo; Vx520G EOS ver 1.8.0.x Static IP Mode.

  - 130319-5814: Vx680 Wi-Fi - Device does not auto-reconnect to wireless AP if the AP is restarted.

- TCPIP library updates:

  - Added a user function, DnsCacheInvalidate(). The TCPIP stack uses a global cache. There are some cases where the user would like to clear this cache. Clearing the cache can mitigate cache poisoning problems.

  - Added throughput performance improvements and power save

  - Added a new config.sys parameter, *MAX_BATCH_RECV_SIZE. This parameter can improve throughput performance by increasing efficiency by increasing the number of receive buffers that can be processed in one event. The minimum is 1, the default is 16 and the maximum is 64.

  - Added a config.sys parameter, *PS_SND_DLY. After any data is sent on any interface used by the TCPIP stack, this parameter specifies the # of milliseconds by which the drop to 24MHz clock will be delayed . The minimum is 0, the default is 500, and the maximum is 20000.

- Added a config.sys parameter, *PS_RCV_DLY. After any data is received on any interface used by the TCPIP stack, this parameter specifies the # of milliseconds by which the drop to 24MHz clock will be delayed. The minimum is 0, the default is 500, and the maximum is 20000.

- Added a config.sys parameter, *PS_PKT_SZ. For any block of data that is sent or received on any TCPIP interface, this parameter specifies the minimum block size that will be used for triggering the delay specified by either PS_SND_DLY or PS_RCV_DLY. The minimum is 0, the default is 0, and the maximum is 8K.

- Improved FTP performance for downloading a file. Writes to flash are faster as they are done in 2K chunks to improve efficiency.

- Added a config.sys parameter, *FTPRCVBUF. This parameter specifies the size of socket receive buffer (which also sets the TCP Window size) used for any FTP control or data connection created when calling ftpGet() or ftpPut(). Setting this parameter forces a call to setSockOpt() and sets the option, SO_RCVBUF. The minimum is 8, the default is 8, and the maximum is 512. Units are in kilobytes.

- Added a config.sys parameter, *FTPSNDBUF. This parameter specifies the size of socket send buffer (which also sets the TCP Window size) used for any FTP control or data connection created when calling ftpGet() or ftpPut(). Setting this parameter forces a call to setSockOpt() and sets the option, SO_SNDBUF. The minimum is 8, the default is 8, and the maximum is 512. Units are in kilobytes.

- Added a config.sys parameter, *FTP_RCV_SIZE. This parameter specifies the size of the receive buffer used to pull data from the socket for any control or data connection created when calling ftpGet or ftpPut. The minimum is 4, the default is 64, and the maximum is 64. Units are in kilobytes.

2.67 Significant Changes from Version 1.8.0.13 to 1.8.1.1

- Merge EOS 1.4.6.0 and 1.7.3.0.

- Changed default value of DDI parameters GP_SHUTDWN and GS_SHUTDWN to true.

- Changed allowed values of HS_NETWORK to:
  - 0: Use default radio settings for network selection (default)
  - 1: Set radio to take care of network selection

- o 2: Set radio to 2G only connection

- o 3: Set radio to 3G only connection

- Fixes for the following Amdocs Cases:

  - o 130118-17975: eVo; EOS DIAL does not handle IOCTL_GET_CONNECTION_BAUD.

  - o 121212-11505: eVo; Vx680GPRS will lost connection during receiving data.

  - o 130123-8912: eVo; Vx680 BT; unable to retrieve Default Wi-Fi Profile.

    - Added IOCTL_GET_DEFAULT_PROFILE for retrieving the default Wi-Fi profile.

- Fixed issue of SIM2 initialization taking 2 minutes to complete on release 3 3G radio firmware.

- Fixed issue of AT^SMSO not being called when terminal is turned off using red key long press.

2.68 Significant Changes from Version 1.7.1.0 to 1.8.0.13

- Added support for Vx680-3G terminal.

- Added the following IOCTL request for GPRS and GSM NWIFs:

  - o IOCTL_GET_SERVCELL_INFO - retrieves Tower information.

  - o IOCTL_GET_PDNET_REG - retrieves GPRS registration status.

  - o IOCTL_GET_NET_AVAIL - retrieves GPRS availability.

  - o IOCTL_GET_GSM_LOCINFO - retrieves GSM location info.

  - o IOCTL_GET_GPRS_LOCINFO - retrieves GPRS location info.

  - o IOCTL_GET_FORBDN_LOCINFO - retrieves the Forbidden PLMN data.

- TCPIP library updates:

  - o TCPIP lib updated such that config.sys variables *TCPIP_PROFILE and *SOCKET are not read in the kernel task, as file system is not reentrant.

  - o Changed default # of sockets allocated from 8 to 32. Maximum is still kept at 32.

- o Changed RXBUFFMAX from 64 to 2048 which increases the TCPIP stack's efficiency when reading high throughput data on a PPP connection.
- o Comm Receive changed to increase frequency of pulling rx data from devices to decrease latency.
- o Default socket send and receive buffers used by FTP increased from 4KB to 8KB. Added two new config.sys variables, *FTPRCVBUF and *FTPSNDBUF that can override the default socket send and receive buffers.
- Fixes for the following Amdocs Cases:
  - o 120606-9346: CE_EVT_SIGNAL issue on EOS 1.4.5.3. RSSI notification is not being received when Wi-Fi NWIF is started as incremental.
  - o 120830-11084: VX680 Wi-Fi does not reconnect to WPA network after being out of range. RSSI notification is not being received when Wi-Fi NWIF is started as incremental which give wrong impression on applications that reconnect failed.

2.69 Significant Changes from Version 1.7.2.0 to 1.7.3.0

- Fix for Amdocs case 130113-948: BT Base connect terminal will be Port Open Fail(-102)

2.70 Significant Changes from Version 1.7.1.0 to 1.7.2.0

- Fix for Amdocs case 121030-7299: eVo; EOS; Direct dial, unable to detect SDLC problems.

2.71 Significant Changes from Version 1.6.1.2 to 1.7.1.0

- Merged EOS versions 1.4.5, 1.5.3 and 1.6.1.
- Rebuilt components using ARM RVDS 4.0 with RVCT Web Path Build 902.
- Added use of VxGUI to display NCP, BCP and WCP. Parameter *EOSUSEVXGUI controls if EOS will use VxGUI. When VxGUI is not installed or is not running, EOS reverts to its original display.
- Added GID 1 config.sys parameter EOS_WPROF_RST to enable users to reset the Wi-Fi configuration file whenever it becomes corrupted due to incorrect network profile setting.

- To reset the Wi-Fi configuration file, user needs to simultaneously delete WiFiProf.ini in GID 1 and set EOS_WPROF_RST to 1. Reset is performed on next startup of Wi-Fi network interface.

- TCPIP lib updated such that config.sys variables *TCPIP_PROFILE and *SOCKET are not read in the kernel task, as file system is not reentrant.

- Support for OS deep sleep on multiple terminals.

- Fixes for the following Amdocs Cases:

  - 120423-2201: Data structures for Wi-Fi are confusing.

  - 120424-4516: Provide the negative RSSI value in IOCL_GET_SEARCH_RESULT.

  - 120424-4527: IOCTL_GET_BSSINFO to return correct freq value. Return correct negative RSSI value in search result.

  - 120418-8282: IOCTL_SEARCH should be a Set operation. Removed unused parameters BT_AUTH and BT_ENCRYPT. Removed IOCTL_DEVICE_SEARCH since it is the same value with IOCTL_SEARCH. Scan operation for both Wi-Fi and BT will use IOCTL_SEARCH.

  - 120502-9028: Display error details when WPA PSK is wrong.

  - 120510-11159: Adhoc fails when 1st peer to join network.

  - 120515-6079: Added IOCTL_GET_PAN_DEVICE and IOCTL_GET_DUN_DEVICE in Bluetooth, as counterpart IOCTL to IOCTL_GET_BSSINFO in Wi-Fi.

  - 120626-5503: Requirement for adjusting DL_CONN_TO min value from 45s to 10secs.

  - 120423-1448: Vx680 GPRS Roaming failure with Jasper SIM

  - 120717-10359: Vx520; Verix eVo; Will not download via Ethernet.

    - Allow empty input on port number in NCP download. If port is not in1dicated, default port number for SVC_ZONTALK_NET() API will be used as stated in Doc00302.

  - 120424-4595: ceGetDDParamValue(IOCTL_GET_NW_PROFILE_LIST) does not set ddi_nw_list.BSSID.

    - The IOCTL_NW_PROFILE_LIST will not return a BSSID. The member variables BSSID and bssid_len will contain 0s. Only IOCTL_GET_BSSINFO will return a BSSID for the connected network profile.

  - 120709-5080: 680Wifi with error -701.

- Fixed issue of WPA Interface failure occurring after IOCTL_SET_NW_PROFILE on Vx680 Wi-Fi when PSK length is set but the PSK string is empty.
  - o 120808-9383: eVo; Vx520G; multiple ceStopNWIF/StartNWIF GPRS leads to failure.

- Fixed issue of no "device detached" error on Vx805 Duet when LAN cable is unplugged and terminal was undocked.

- Fix crash issue on NA-CommServer
  - o Updated SSL library function ID mismatch on its LID file.

2.72 Significant Changes from Version 1.6.0.11 to 1.6.1.2

- Added SSL server support.

- Rebuilt EOS using SDK 3.7.1.

- Fixes for the following Amdocs Cases
  - o 120120-12913: "Vx520; AT Device Not Found!"
    - Allow setting of empty string phone number.
  - o 120316-14349: IP Download Not working on Vx520 with EOS 1.5.1.2.
  - o 120216-10572: Vx520; Ethernet broadcast overdose is fatal to NWIF.

2.73 Significant Changes from Version 1.5.3.3 to 1.6.0.11

- Added support for Vx675

- Added IOCTL command, named IOCTL_GET_OPERATOR_NAME, to get GPRS/GSM operator name.

- Update on sending CE_EVT_SIGNAL: CE will instantly be sending CE_EVT_SIGNAL event to the application that recently subscribed for signal notification.

- Updated manifest file to run VXGUI.vsa after VxCE.out

- Enhanced the DHCP negotiation to speed-up the assignment of IP address.

- Added INI variables to allow GPRS/GSM multiplexer initialization

- Added fix for Amdocs Case 120123-2931: AutoDL 1.0.1.2 Check Updates Function Enables Auto Answer.

2.74 Significant Changes from Version 1.5.2.6 to 1.5.3.3

- Enable Ethernet dongle support for all Vx680 models.
  - o Added *EOSUSBDEV config variable to enable/disable support for Ethernet dongle on Vx680 terminals.
- Rebuilt EOS using SDK 3.7.0.
- Fixes for the following Amdocs Cases:
  - o 120120-12913: Vx520; AT Device Not Found!
    - Allow setting of empty string phone number.
  - o 120316-14349: eVo; SSL IP Download Not working on Vx520 with EOS 1.5.1.2
  - o 120416-4910: eVo; Vx680; Upgrade to EOS 1.5.2.6 adds an Ethernet device
  - o 120419-12629: eVo; Vx680;Problem with EOS 1.5.2.6 in Vx680 GPRS. It adds an Ethernet device.
  - o 120216-10572: Vx520; Ethernet broadcast overdose is fatal to NWIF.

2.75 Significant Changes from Version 1.5.1.2 to 1.5.2.6

- Support for IC10366: EOS Enhancement to Support USB Dongle in Vx680 GPRS.
- Enhanced the DHCP negotiation to speed-up the assignment of IP address.
- Added CEIF.LID file in EOS SDK.
- Added AT command to initialize Vx680 GPRS radio after multiplexer has been enabled.
- Fix for Amdocs Case 120123-2931: AutoDL 1.0.1.2 Check Updates Function Enables Auto Answer.

2.76 Significant Changes from Version 1.5.0.11 to 1.5.1.2

- Fix for Amdocs Case 111010-3152: VX520 GPRS, Communication Failures.
- Fixed saving of network interface displayed on idle screen when set to PPP/GSM.
- Fix issue on GSM/GPRS DDI driver not executing GS_INIT_n INI initialization string.

2.77 Significant Changes from Version 1.4.5.3 to 1.5.0.11

- Ethernet will be the default media in the NWIF Hierarchy. Hence for e.g., in Vx520G, Ethernet will be the default media.

- Enhanced Automatic Reconnection of EOS network interfaces. Refer to DOC00302-"Verix eVo Vol2: Operating System and Communication Programmer's Guide", Chapter 6 under "CommEngine Auto-reconnection" section for reference.
    - o New CE configuration parameters RECONN_MAX, RECONN_INTERVAL, RECONN_TO and RECONN_EXEMPT were added to support the new auto-reconnection mechanism.

- GPRS network attachment status is always queried from the radio. Previous implementation cached the attachment status after radio has attached to the network.

- GPRS/GSM RSSI URC notifications are always turned on when the DDI needs to connect to the network. This allows the DDI to be always informed about network coverage updates when connecting to network.

- When GP_DETACH is true, DDI detaches from the network before attaching. This detachment process is done for every attachment. Previous implementation only performs the detachment once, which is before the first attachment when DDI driver is loaded.

- Included support for GID 46 config.sys variable update.

- TCPIP Stack specific updates:
    - o Fixed TCPIP to memset allocated struct in gethostbyname() and gethostbyaddr().
    - o Fixed crash when applications repeatedly call a TCPIP/socket function (in particular, recv) without any delay and when the function doesn't block.
    - o Changed the behavior of recv() in TCPIP to be more tolerant of applications that have been developed to ignore recv() returning zero. the app will return 0 first if the remote peer has performed an orderly shutdown, then it will return -1 with errno = EREMCLOSE.
    - o SVC_NET.H: Removed socket flags TM_CB_*. They were duplicates of SE_* flags already in the file.

- Fixed the following Amdocs cases:
    - o 110719-5121: [VX680] "PPP Auth Failure" does not set error code in stNI_NWIFState.
    - o 110717-1020: TCP/IP 127.0.0.1 support without cable connected

- o 110727-8294: Vx680 Connection Maintenance.

2.78 Significant Changes from Version 1.4.4.6 to 1.4.5.3

- Bluetooth changes:
  - o Added IOCTL_EX_BTBASE_RESTORE_FACTORY to trigger a download of the factory restore firmware to the Vx680 Bluetooth base and trigger a factory restore of the Vx680 Bluetooth base.
  - o Added IOCTL_EX_SELECT_REMOTE_BT_AP and IOCTL_GET_BTBASE_INFO to retrieve the following information from the Vx680 Bluetooth base:
    - Firmware version
    - PAN connection type
    - Ethernet cable state
    - Router IP address
    - Serial number
    - Fixed issue of Bluetooth operations failing with a timeout error when the auto pair operation during startup is being performed.
- Wi-Fi changes:
  - o Changed minimum value range of WI_MINRSSI from 0 to 1.

2.79 Significant Changes from Version 1.4.4.6 to 1.4.6.0

- Fix for Amdocs case 120621-12622: EOS 1.4.x branch does not recover ETH connection of Vx820.

2.80 Significant Changes from Version 1.4.3.5 to 1.4.4.6

- Bluetooth changes:
  - o Changes to IOCTL_EX_BTBASE_FW_UP:
    - Changed operation from blocking to non-blocking.
    - Added automatic restart of network interfaces.
  - o Changes to IOCTL_DEVICE_SEARCH:
    - Changed operation from blocking to non-blocking. Device search status is provided via application events.
    - Fixed issue of IOCTL timeout when there is no visible BT device.

- Fixed issue of BT APs not being found and system crash occurring when discovery is performed with VFI base only filter enabled.
  - o Added IOCTL_GET_BT_LOCAL_ADDRESS to retrieve the MAC address of the local BT device.
  - o Added IOCTL_GET_FW_VERSION to retrieve the version of the BT OS Driver.
  - o Improved the error messages returned when a Bluetooth operation fails.
  - o Fixed issue of ceStartDialIF() returning timeout when another terminal is already connected to the BT AP.
  - o Fixed issue of auto reconnect not performed when AUTO_RECONNECT is set to true and WI_ROAM is set to false.
  - o Fixed issue of Ethernet/BT NWIF failing to start when Ethernet/BT and PPP/BT NWIFs are simultaneously started and stopped.
- Wi-Fi Changes:
  - o Added support for WPA/WPA2-CCKM Wi-Fi authentication types.
  - o Added display of Good Signal/Poor Signal in NCP for Wi-Fi interface.
  - o Added sending of RSSI notification during initial enable of RSSI events.
  - o Changed RSSI events trigger from defined checkpoints to threshold from last RSSI notification. Added new parameter INI_WI_RSSI_STS_THLD to configure the RSSI notification threshold.
  - o Fixed issue of IOCTL_GET_BSSINFO returning incorrect values when authentication and encryption is set to WPA2-PSK and AES-CCMP. Changed encryption type string "CCMP" to "AES-CCMP".
  - o Fixed issue of IOCTL_GET_BSSINFO occasionally causing a system crash.
  - o Fixed issues with low battery handling of WCP.
  - o Fixed issue of NCP not displaying correct status in idle screen when Wi-Fi NWIF is performing auto reconnection.
  - o Fixed issue of duplicate SSID not being detected when SSID length is 32.
  - o Fixed issue of IOCTL_GET_SEARCH_RESULT failing when more than 25 access points are discovered.

- Enhanced the DHCP negotiation to speed-up the assignment of IP address.

- Fixed issue where simultaneously starting Wi-Fi, Ethernet/BT and PPP/BT fails.

- Fixed issue where Wi-Fi and BT can still connect even when battery is below battery threshold.

- In NCP, removed AUTO_RECONNECT menu from BT-Ethernet Comm. Tech.

- In NCP, removed ET_MULCAST and WI_RESP_TO from Wi-Fi Device Driver Setup.

- Fix for Amdocs Case 111010-3152: VX520 GPRS, Communication Failures.

- Fix for Amdocs Case 120123-2931: AutoDL 1.0.1.2 Check Updates Function Enables Auto Answer.

2.81 Significant Changes from Version 1.4.2.8 to 1.4.3.5

- Bluetooth changes:
  - Changes to IOCTL_DEVICE_SEARCH:
    - Increased device count maximum limit to 16.
    - Increased search timeout to 120 seconds.
  - Changes to IOCTL_SET_CONNECT_INFO:
    - Added option for setting all Bluetooth ports in 1 IOCTL call.
  - Added IOCTL_EX_BTBASE_FW_UP for performing BT AP firmware upgrade.
  - Enhanced reconnection time during BT AP restart to just 30 seconds.
  - Improved the Bluetooth link up time by 4 seconds.
  - Added new parameter NO_NET_RET_TM to configure the duration the reconnection is attempted when Bluetooth link is disconnected.

- Wi-Fi changes:
  - Fixed issue where the DHCP lease time being returned is incorrect.
  - Added new parameter WI_ROAM_RENEW_IP to enable/disable renewal of IP address when terminal has roamed to another access point.

- o Added new parameter WI_ROAM_SCAN_PERIOD to set at what interval the background scan for roaming is started after association.

- o Modified the signal percentage computation so that the percentage does not go down easily when terminal is moved away from its connected AP.

- o Fixed issue of Wi-Fi scan request performing targeted scan instead of all SSID scan when connected to an AP.

- Fixed issue on config.sys variables wherein CTLSKNEX key contains multiple values.

2.82 Significant Changes from Version 1.4.1.3 to 1.4.2.8

- Wi-Fi changes:

  - o Added support for adding/editing of network profile and setting of default profile via file WiFiProf.ini downloaded to GID 1.

  - o Added configuration for enabling/disabling of 802.11N support.

  - o Added configuration for CCKM authentication.

  - o Added configuration for time interval of keep-alive packets.

  - o Added display of channel used in Connection Status screen of WCP.

  - o Removed restriction for setting static IP address without setting the gateway and DNS IP addresses.

  - o Fixed power-save setting in the Broadcom Wi-Fi chip.

  - o Fixed issue with handling of MIC failure.

  - o Fixed issue with fast reassociation failure due to wrong handling of PMKID caching.

  - o Fixed issue with association failure due to RSN/IE mismatch from beacon response and from EAPOL message.

- Bluetooth changes:

  - o Added support automatic pairing and setting of connection information via file BTDevices.ini downloaded to GID 1.

  - o Added support for doing dial via Bluetooth connection to a mobile phone that has support for Bluetooth DUN profile.

  - o Added firmware upgrade of Bluetooth base support in BCP.

  - o Added display of local Bluetooth MAC address in BCP.

  - o Added display of MAC address in Setup Paired Devices menu.

- Amdocs Case 110513-13022 for recv() and gethostbyname() / getshotbyaddr().

2.83 Significant Changes from Version 1.4.0.20 to 1.4.1.3

- Added support for Vx680 terminal with Broadcom Bluetooth module. Bluetooth connectivity (Ethernet and dial) is limited to Vx680 BT Access Point. Connectivity to XPBS019 Dione base stations and mobile phones is yet to be added.

- Amdocs Case 110719-5121 - "PPP Auth Failure" does not set error code in stNI_NWIFState.

2.84 Significant Changes from Version 1.3.3.0 to 1.4.0.20

- Added support for Vx680 terminal with Broadcom 4329 Wi-Fi module

- Includes support for ceStopNWIF() to abort the data call depending on whether the DDI driver supports abort

- Amdocs Case 110505-12013 - TCPIP memory leak for getHostbyname is fixed.

2.85 Significant Changes from Version 1.3.2.1 to 1.3.3.0

- PPP timeout recovery will retry 3 times before completely tearing down the network.

2.86 Significant Changes from Version 1.3.1.0 to 1.3.2.1

- Addressed CHAP authentication issue encountered in China ICBC project.

- Changed the behavior of recv() to be more tolerant of applications that have been developed to ignore recv() returning zero. The app will return 0 first if the remote peer has performed an orderly shutdown, then it will return -1 with errno = EREMCLOSE.

- TCPIP stack specific updates:
  - Fixed problem with gethostbyname() and gethostbyaddr() which don't fully clear the newly allocated memory. Fix is to memset the entire structure instead of only part of it.
  - Fixed crash when applications repeatedly call a TCPIP/socket function (in particular, recv) without any delay and when the function doesn't block.

- Fix for Amdocs Case 110513-13022: System Error in Download

- Fix issue on terminal not entering power save mode when left idle in NCP menu after successful netconnect.

2.87 Significant Changes from Version 1.1.0.6 to 1.3.1.0

- Merged EOS 1.0.9.0 and EOS 1.1.0.6.
- Added support for Vx820 Duet and Vx805 Cordless/Duet terminals.
- Added support for VxGUI.
- Amdocs Case 110505-12013 - TCPIP memory leak for getHostbyname is fixed.
- Added OnTime Feature Request 432: Create NCP-UI to setup LogSpooler.

2.88 Significant Changes from Version 1.0.9.0 to 1.1.0.6

- Added new EOS DDI driver to support EVDO/CDMA on Vx680 CDMA terminal.
- Additional changes for Feature 434 Phase 2. ceStopNWIF() will also support aborting the data call depending if the DDI Driver supports abort.
- Added OnTime Feature Request 444: EOSLog header file changes.
  - Added ELSE condition on macros eoslog.h that have IF-clause.
  - Added void * and const qualifiers on function parameters.

2.89 Significant Changes from Version 1.0.8.2 to 1.0.9.0

- Added fix on CE issue were signal notification flag is not properly set to generate CE_EVT_SIGNAL event.

2.90 Significant Changes from Version 1.0.7.5 to 1.0.8.2

- Optimized to minimize access to NAND memory.
- Fixed the issue described in the following Amdocs case:
  - 110612-365: Vx520 Ethernet TCP Socket effect to 'no kernel memory'.

2.91 Significant Changes from Version 1.2.0.6 to 1.2.1.0

- Fix for Amdocs Case 130321-13865 - eVo; EOS CE not returning primary port/device ownership in multi app scenario.

2.92 Significant Changes from Version 1.0.6.3 to 1.2.0.6

- Added support for IC10023 $custom Project.

- Amdocs Case 110505-12013 - TCPIP memory leak for getHostbyname is fixed.

2.93 Significant Changes from Version 1.0.6.3 to 1.0.7.5

- Added fix for TCPIP memory leak for getHostbyname() API.

- Added CE_EVT_PROCESSING_NET_UP and CE_EVT_PROCESSING_NET_DN CEIF events.

- CE broadcasts events CE_EVT_PROCESSING_NET_UP and CE_EVT_PROCESSING_NET_DN when starting and stopping NWIF respectively.

- On Vx680 GPRS, NWIF connection is fully teared down when battery is detached. When battery is re-attached, CE initiates the automatic reconnection of the network interface.

- NCP optimized to enable/disablement of signal notifications to reduce queries to CE.

- Network maintenance Restart/Stop/Start is not allowed if selected NWIF is in transition state, bringing up/dn network.

- CE Client Manager is optimized to reduce redundant RSSI notification requests to CommEngine.

- Added recovery mechanism when GPRS/GSM modem is not operable.

- The default value of GP_ATCH_TO is 20000 ms.

- Added PPP_AUTH_TYPE in NCP NWIF information screen.

- Updated SSL to version 1.1.0.3. This version exposes several SSL APIs to application to support Vx600 SSL requirements.