Purpose

The goal of the IVS release procedure is to control core software releases by ensuring that the software files for ECUs are valid, stored, documented and available in corporate systems on the dates established by the Program Management Team.

Exclusions

Portions of this procedure do not apply for:
- Powertrain ECUs
- APIM (SYNC) ECUs.
- ECUs that are not reprogrammable via the CAN Bus.

IVS release procedure

Everytime the software for an ECU assembly is to be released through the IVS database, the following deliverables shall be provided to the IVS team after change and release approvals are obtained through the Software Change Management Process:

1. WERS Release.
2. Software Announcement Document.
3. Software Files.
4. DID reports.
5. Part II Specification.

1. WERS release

Expected delivery time

The WERS release shall be complete before the software file is uploaded in IVS.

Acceptance criteria

The assembly, its components (Hardware, Core assembly, Strategy, Calibration and Signal Configuration) and its supporting parts (Applications, ECU configurations, Part II specification and Secondary Bootloader) should have been previously released in WERS by means of notices. The notice (s) should include the list of affected programs and part numbers that comply with FAP 03-145 with base part numbers as specified in the GMRDB.

WERS Notice(s) shall be in 'R' status to be considered complete which means that the parts are visible in the base cross-reference menu.

2. SW announcement document

All software releases must be announced with a Software Announcement Document (SWAD).

Expected delivery time

Three weeks before the software delivery due date established by the lead program.

Acceptance criteria

The Software announcement document is an MS Excel template. This document shall contain the applicable information about the announced software including part numbers and software dependencies.

3. Software files

Expected delivery time

The ECU development team shall deliver Software files on the dates established by the Program Management Team and/or the Functional Integration Team as per the Software Release Schedule. Be aware that the IVS engineer needs up to 24 hours to complete the product structures creation in the IVS database.

Acceptance criteria

The functionality of the software files must be validated by the ECU development team prior to deliver to IVS. Neither the IVS engineer nor the IVS database perform functional testing. The file name and its header must be the same part number released in WERS.

Software components shall never be rebuilt with the same part number.

Regarding the format of the software files, various types are allowed (i.e: .vbf, .hex, .tcu), nevertheless the selected one must be first agreed with the IVS engineer in order to ensure that the format is supported.

Software files shall be delivered to Ford by the ECU development team, who will upload them directly into IVS by attaching them to the corresponding product structures previously created. No other delivery method, such as, but not limited to: e-Mail, Flashdrive or Sharepoint is allowed.

4. DID report

Expected delivery time

The report is expected to be delivered at the same time that a new ECU assembly or ECU Configuration part number has to be created or revised in IVS.

Acceptance criteria

1. Have been generated by the DID validation tool.
2. Have not been modified manually.
3. Have been generated using the target hardware.
4. Show that the actual content of each DIDs matches the part number released in WERS in the corresponding DIDs
5. Show that each comparison between the expected and received DID value passes in the diagnostics sessions that are supported by the module: Default and/or Programming and/or Extended.
6. Have been generated by the supplier when all parts are sourced and by the D&R engineer when the ECU configurations are developed in-house.

5. Part II Specification

Expected delivery time

When there is a new or modified version of the Part II specification, it must be delivered to IVS at the same time than the supported assembly's software files. If the part is re-used, then the part number must be specified in the Software Announcement Document.

The final production version of the Part II specification has to be ready by <PEC>.

Acceptance criteria

The Part II specification must have been validated by a Netcom Engineer and it must contain two files comprised in a .zip file: The machine-readable version in .MDX format and the human-readable version of in .doc or .docx format.

General rules

1. The assembly-to-software's parts relationships specified in the Software Announcement Document and WERS shall be considered the sign-off for mapping the assembly structures in the IVS database.
2. Prototype part numbers are allowed to be used in development phases only (prior to <TT>).
3. Production part numbers must be used to support software deliveries from <TT> onwards.
4. When a software part is modified and it is no longer compatible with the past versions of the assembly, the design level in its suffix shall be advanced.
5. Software releases for running changes must comply with the same requirements as SW for development.
6. The shipment to Ford's facilities of ECU modules whose software is not released in IVS is not allowed.
7. Failure to complete any of the deliverables as explained above and/or failure to adhere to the general rules shall be considered a deviation. In order to proceed with a deviation, the ECU development team shall fill in an IVS deviation form and obtain endorsement from an LL5 above and approval from the IVS supervisor.

Freezing and availability for downstream systems

Once all deliverables have met the exit criteria, the files shall be uploaded to the IVS database. In order for these files to become available for downstream systems they have to be frozen in IVS. This action is considered the last step of the IVS Release Procedure.

References

- IVS release procedure and requirements v3.2
- Global Master Reference Database
- Ford Automotive Procedure for Production Part Identification (FAP 03-145)
- Global Diagnostic Specification Part One (preISO14229).
- CAN (Controller Area Network) Generic Diagnostic Specification (GDS)
- Module Programming & Configuration Design Specification (pre-ISO14229)
- Global Generic Diagnostic Specification (GGDS) (ISO 14229)
- Software Download Specification (SWDL) (ISO 14229)
- Versatile Binary Format Specification (VBF)
- GPDS Online

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Deliverables for releasing Software via IVS V1.2