

***<IVS Attachment Template>***

***{Program Name/Model Year}***

***IVS ATTACHMENT OF THE STATEMENT OF WORK***

Version 2016.2

Date Issued: June 23, 2017

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# Software Statement of Work

The tables below describe essential activity associated with the development of *<Commodity scope>* software for use in production intent vehicle electronics. All ECU's and/or subsystems must comply with the tasks and deliverables within. Diagnostic software must also comply with the tasks and deliverables described in this *IVS Attachment Of the statement of work.*

## Software Process Support

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| **Item** | **The Supplier Shall:** |
| R: 1.1‑1 | Comply with Generic Global Diagnostic Specification (GGDS) Part 1 – Diagnostic Implementation Requirements (or Global Diagnostic Specification - Part One for non-GGDS module), Software Download Specification, Versatile Binary Format (VBF) (or Module Programming & Configuration Design Specification for non-GGDS module), and In-Vehicle Software Release Procedures to prepare and upload the HEX and/or VBF files to Ford In-Vehicle Software (IVS) system. |
| R:1-1-2 | Comply with FAP 03-145 and FAP 03-147 |
| R: 1.1‑3 | Software components shall never be rebuilt with the same part number. One way this can happen is if a new software release is being created that contains multiple components. If the main application is being revised and its part number is updated, there may be a tendency to assume that the other components can be used when they are rebuilt in a batch software rebuild. This cannot be allowed. Every software component that has a unique production part number also has a unique md5 checksum. A file with the same part number cannot be created with a different checksum. If there is then it must be destroyed and never used. |
| R: 1.1‑4 | When production software is produced and released it is checked in to IVS. All test activities performing tests on this production software must either get it directly from IVS, or verify that the file being used has the same md5 checksum that is registered in the metadata for the file in IVS. Any tests that are found to have been performed without this check shall be declared invalid and cannot be used to sign off on the release of the software. |

## Embedded Software Requirements and Reviews

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| **Item** | **The Supplier Shall:** |
| R: 1.22‑1 | Fill out and deliver at FDJ the IVS checklist for new and modified modules. Note that this does not apply in the case of fully carryover modules (No changes in any software components). |
| R: 1.22‑2 | Fill out and deliver a Software Announcement Document prior to each software delivery. |
| R: 1.2-3 | Deliver validated software files to the IVS engineer or by uploading the software files and DIDs report files directly to the IVS database in the dates specified by the Program Team or the Functional Integration Team. The supplier will make sure to obtain the FSN ID and the IVS account necessary for these uploads with the upport of the IVS team. |
| R: 1.2‑4 | Provide DID Validation results, in the form of an electronic text file, generated by the DID Validation Tool, for every version of the assembly or the method three file, which are to be installed in the target hardware. The results shall validate that the part numbers embedded in ALL DIDs of the ECU match the part numbers released in WERS for that ECU. Any SW part being released for production MUST have fully qualified embedded WERS production part numbers in the correct DIDs. This will allow the DIDs to be verified via the PSW process and prevent incorrect part numbers from inadvertently released into production. |
| R: 1.2‑5 | Prove out Backwards compatibility for each software release. |
| R: 1.2‑6 | Deliver a PartII specification (SSDS) for each software release. |

## Responsibilities and Deliverables

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| **Program Timing** | **Task** | **Supplier POC** | |
| **Responsibilities** | **Deliverables** |
| FDJ | To fill out the IVS checklist for new or modified modules | To answer all questions and review the responses with the IVS engineer. | Reviewed IVS Checklist document |
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| From M1 – All software Deliveries | Software Announcement document delivery | Fill and deliver the Ford agreed template and version of the Software announcement document prior to each delivery of software files | Filled Software announcement document |
| From M1 – All software Deliveries | Software Files delivery | Deliver Software files as requested by the Program Team or the Functional Integration Team | Software files(format must comply with Ford Specifications) |
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| From M1 – All software Deliveries | DID Reports. | The supplier must generate DID reports with the target hardware and these DID reports must reflect the actual content of the module in three sessions: Default, Programming and Extended, this to comply with the PSW process. | DID report run on target hardware |
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| From M1 – All software Deliveries | Part II specification (SSDS) | The supplier shall develop and provide the Part II specification package to NetCom Engineers for validation | Part II specification package |

## Deliverable Glossary

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| **Deliverable** | **Definition** | **Expected format** | **Expectation** |
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| **IVS checklist:** | IVS Checklist: Is a questionnaire to assess the knowledge of the supplier and the D&R engineer about the IVS release procedure. | .doc or .docx file | All fields answered and reviewed with an IVS engineer |
| **Software announcement document:** | This document announces a new release of SW summarizing basic information such as: SW Issues, New Features, Affected Programs, the master part number matrix as released in WERS, SW and Hardware backwards compatibility. | Software announcement template in .xls or .xlsx. [Ford agreed template and version] | All fields answered. |
| **Software files** | Files that can be used as software strategy, calibration, configuration or bootloader. | Software files(format must comply with Ford Specifications) | Software files should be retrieved from a shared secure location compliant with Ford Motor Company’s IT policies, examples of these storage locations are: IVS tool, SharePoint sites and Shared Drive.  Email is not considered an acceptable mechanism for the purposes of business application file or data transfer, where high availability or confidentiality is required.   All software files must be validated by the development team prior to delivery. The file name and its header must be the part number released in WERS. In case of ECU configuration files these must be delivered through the M3 Configuration file upload form.    Some metadata could be required for modules such as but not limited to: ABS (White papers), SYNC (runtime size, marketing descriptions, end user license agreement and functional specifications) and others. |
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| **DID Reports** | The DIDs report (Data Identifiers Report) is the output of a comparison between expected and programmed part numbers in the DIDs of the ECU assembly. This is used as an evidence of having fully qualified WERS production part numbers embedded in the correct DIDs in order to prevent production parts with prototype or invalid part numbers from inadvertently released into production. | The supported file format is .txt | The DID reports must be generated with the target hardware and must reflect the actual content of the module in three sessions: Default, Programming and Extended. |
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| **Part II specification (SSDS)** | It defines the diagnostic functionality (DIDs, DTCs, Execution Routines, Security Access, etc…) which is implemented by an ECU. | Part II Specification should be provided in a zip package which contains:  1.) \*.mdx file (Part II Specification)  2.) \*.doc or .docx file (Part II Specification in human readable format  3.) \*.mdx log (MDX validator results)  4.) Part number matrix which provides a mapping of what programs utilize the Part II specification (This can be the Software Announcement Document) | Part II Diagnostic Specification provided at VP0 software drop.  If there are diagnostic updates for subsequent IVS software releases, a Part Specification must be included as part of the software release package.  Final Part Specification should be provided by <FEC>. |
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Log of changes:

From Version 2015.1 to Version 2016.1

1.3 in **Program Timing changed M1-Running Changes, to** From M1 – All software Deliveries

1.3 1.4 SWAD is a Ford agreed template

From Version 2016.1 to Version 2016.2

R: 1.1‑3 and R: 1.1‑4 were included