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Executive summary

This document is the culmination of the IT Management Platform and the integration with all previous WP 8 deliverables. The integration of the different subsystems is crucial in the correct completion of the objectives and communications is the key to ensure this integration.

This document explains how the implementation of the IT Platform has been developed, the solutions and strategies used to overcome the different challenges that it has been encountered. Also, it explains the IT components system architecture and functionalities deployment, including:

- General documentation store,
- Certification monitoring,
- Supply Chain management and monitoring process,
- Production and analysis planning,
- Logistic process monitoring,
- Maintenance monitoring,
- Knowledge data base and
- Part library.

The Central Node (CN) directly contributes to the following objectives:

- Objective 1. Reduce repair and overhaul costs of complex spare parts by 30% and the turnaround time by 20% through the use of a combination of innovative technologies
- Objective 2. Increase the automation level for the spare parts production processes by 20% through an integrated production and supply chain
- Objective 5. Develop processes to decrease certification effort for additive manufactured AAT spare parts in terms of cost and time based on an integrated quality control and process data monitoring
- Objective 7. Strengthen the business model of European MRO service provider in the world by integrating a complete production and supply chain for complex spare parts

This document addresses organizations responsible for working out the deliverables in work package 8 and all partners whom can understand how communication and data nature transfer is going on between them across the platform.

The IT Management Platform has been developed as a centralized architecture with all functionalities assigned to the central node, with the goal of ensuring the robustness of the process and information security. This architecture has been developed under a MVC structure. This structure consists of three separated layers: the View Layer, the Controller Layer and the Model Layer.

In the section **Application development,** first it is identified the user needs to perform their tasks. To accomplish this Use Cases were analyzed, then the conclusions were embodied on entities and finally expressed in the database structure. In this section this analysis is explained.

Use cases: Nine use cases have been defined on the IT Management Platform: Prediction Role, Decision Role, Production Role, Quality Role, CAMO Role, MRO Role, System Role, System Administrator, Security Administrator.

Entities: Create necessary Entities and its relationships to develop the application covering all use cases. J2EE and JPA were used for development their level of standardization. PROCESS Entity is defined by four elements: Part, Technology, Partner and Machine.

Database: Database is explained. This structure is based on the entities and the need for certification of any process available on the IT Management Platform.

In the **Relation between IT Central Node and Subsystems** section the following are defined:

Subsystems communicate with the central node for information on job status and supply changes made by users. These include the Prediction System (monitors the state of parts at any given moment), CAMO Communication (establishes an exchange of information on parts life cycle), MRO Component (monitors all production processes), Decision Component and Workshop (responsible for valuing the most convenient option: repairing or manufacturing), Production (controls all repairing/manufacturing actions done on the platform), Quality System (analyses the documentation provided by the production process and qualifies a Part as valid) and Automated processes (other processes that are done automatically).

The **Users** section consist of:

User access: The user access to platform information can be done in three different ways: Platform login screen, Bridges (Session Webtoken), Bridges (Application Webtoken).

Log System: Log System can register almost all actions performed on the platform.

Permissions: Permissions are defined for one side by User and Role level and on the other side by section and action.

The **Documentation repository** section clarifies why and how a specific programme was developed to overcome the shortcomings of DSpace for this purpose, although a connection with DSpace is preserved.

The section on **Compliance with requirements** presents a list of the requirements that the IT Management Platform should accomplish and explain if the requirement is accomplished and in which way.