Advanced Research and Engineering for Space

INTEGRATED LOGISTIC SUPPORT FOR GROUND SEGMENT

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TOR VERGATA UNIVERSITY

TECHNOLOGICAL CONSULTING SERVICES SRL

ILS

In the management of a complex system is very important the concept of Integrated Logistic Support (ILS).

The vision of a system managed by an ILS is focused on the entire life cycle of the system and enables compliance with all the operational requirements.

PROCESSES

Main processes required for the logistic support of a ground segment are:

- Configuration control
- Materials Management
- Maintenance Management
- Decision Support
- Logistic Analysis

CONFIGURATION CONTROL

- The process of configuration control is the heart of the ILS
- It lets you know what is installed on the system and get the details on the possible use of alternative parts, on the loss of redundancy and much more.
- Unfortunately, the configuration control (which must be applied not only to the system hardware but also the software and documentation) is one of the processes which, if not properly designed and applied, is likely to drift or be inefficient if not even to become ineffective.
- The process of configuration control that we propose involves the following main areas:
  - Determination of initial configurations and loading it
  - Configuration change control
  - Management of redundancies and of nodes with limited life
  - Accounting for consumption in configuration elements with limited life
  - Control of obsolescence
  - Manage the disposal of the plant
  - Check the configuration of the documents
  - Check the configuration of software components

MATERIALS MANAGEMENT

- The process of materials management allows to maintain an adequate inventory of spare parts, instrumentation and equipment required for maintenance.
- The main areas of materials management are the following:
  - Warehouse Management
  - Procurement management
  - Transportation Management
  - Management of repairs
  - Management of reverse logistics and disposal of components

MAINTENANCE MANAGEMENT

- The maintenance, in order to be successful, requires a strict configuration control and an excellent materials management.
- The macro areas in which maintenance can be thought divided are the following:
  - Management of maintenance plans (including maintenance schedules, maintenance procedures, etc..)
  - Control of life limited components
  - Management of measuring instruments (inclusive of the aspects of metrological confirmation and / or calibration)
  - Management of maintenance programs
  - Audit support and planning
  - Management of work orders and maintenance centers
  - Planning of maintenance activities
  - Management of skills and equipments
  - Manage of maintenance tickets
  - RCM (Reliability Centered Maintenance) or similar approaches to maintenance

DECISION SUPPORT

- The large amount of data generated by integrated logistics support may be submitted to a tool for decision support that allows, even to non IT-expert users, to quickly and easily obtain summary information that can help them effectively in decision-making processes.
- It ‘s obvious that this tool is extremely useful for top management, as well as for people with operational responsibility.
- Thanks to the decision support system, decisions taken are based on accurate and timely information. Furthermore it is easy to have an overview, complete and updated, of the current situation.

LOGISTIC ANALYSIS

- The logistic analysis is a set of tools that, although falling within the decision support area, allows the production of information very useful and closely related to the management of integrated logistics support.
- A list of the main analysis tools is:
  - Optimization of inventory levels
  - Establishing policies to repair (or LORA-Level of Repair Analysis)
  - Analysis of the cost of the life cycle
  - Analysis of maintenance task
  - Analysis of the reliability

THE SOFTWARE TOOL

- All the above ILS processes are supported by a set of software components collected under the name CAILS (pronounced like “Sails”).

WHAT WE CAN PROVIDE

- We can provide a single package, focused on some or all the ILS processes
- In this package we provide:
  - Consultants to implement the ILS
  - Customizable Software Components
  - Logistic Engineering skills

PRESENTATION END

- Thank you for your attention
- Questions?