



Software applications

Tooling management system



AERTEC has developed a software solution that allows the management and control of tooling processes in real time. It records, using mobile devices such as PDAs, all the relevant and useful data from various manufacturing processes. In general it allows:

- Recording of control data required by each process, using mobile devices
- Synchronisation of all the data, in real time if required, using Wi-Fi or 3G
- Exchange of messages between a central admin system and the different service users that have a mobile device
- Assigning of tasks and the monitoring of their evolution in real time from the central admin system
- Generation of reports and statistics with relevant and useful data

Aircraft manufacturer and OEMs manage complex aerospace facilities where a diversity of tools are used and handled in various phases during the manufacturing process. These

involve both internal and external resources that must work together. Visibility of tooling status and availability is of critical importance in this type of operation.

Several aspects of tooling management are outsourced for various operations, for example cleaning. Having real time knowledge of tooling status, issues and availability is key for optimum management of resources and increased control over cycle times and potential bottlenecks.

The philosophy behind tooling management in real time can be applied to any other phase or process in the manufacturing sequence, providing relevant data for improving the operations and reducing waste. Its scalability and adaptability also make it suitable to any aerospace manufacturing or assembly environment.

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Software applications

The main objective of the system is to gather information about the state of the tooling, its condition and the state of the manufacturing process. This allows identify improvement to be identified, and continuous improvement and problem solving techniques to be applied.

The system allows the users, both internal and external to update, using mobile devices, the phases through which the toolings are progressing. This information will be accessible to the system administrator using a console, and can be saved in a database for future analysis and report generation.

The solution is composed by:

- **Mobile devices** with voice and data transmission capability
- **Fixed touch screens**
- **Barcode reader** using bluetooth
- **SW system** that combines the module executed on each mobile device, a web module to allow system administration and generate reports, and a centralised relational database management system. A web application that allows the system administrator to:
 - *Visualise the data captured by the mobile devices*
 - *Generate reports that will provide the parameters and information required to measure: tooling state, current process phase, time elapsed for each phase, estimated delivery times and issues*
- **Communications infrastructures**
Internet based communications infrastructure, both mobile (GPRS) for the mobile devices and touchscreens, and cable for desktop PCs and server

Visibility

For managing tooling that involves several phases during the manufacturing process, especially if it involves external or subcontracted parties. The visibility of the tooling current state and availability is an important aspect.

Time

With the data recorded using the mobile devices it is possible to measure in real time each of the process phases, allowing for feedback about this information.

Alerts and issues

During the different phases of the process, the manufacturer may wish to send amendments or notifications. During each phase issues may arise that can be relayed to the system administrator. The system also allows messages to be sent, from the central console to the mobile devices.

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