The eCHECK system is developed by Skytek in partnership with Shannon Aerospace, which is a 100% subsidiary of Lufthansa Technik AG. Skytek is a software development company that specialises in procedural support systems for the Space, Aerospace and Security Industries. Shannon Aerospace is a maintenance, repair and overhaul (MRO) which specialises in the Heavy Airframe Overhaul of narrow body aircraft types performing structural maintenance checks specifically on the Airbus, Boeing and McDonnell Douglas type aircraft.

The eCHECK system aimed to address limitations in current MRO workflow processes and optimise the delivery of accurate, intelligent and procedural information to engineers who perform complex maintenance of aircrafts.

Aircraft maintenance tasks are performed by engineers based on two discrete elements: firstly, the Job Card that defines the work instructions for engineers; and secondly, the Maintenance Manuals which provide technical support to assist engineers in completion of assigned tasks.

Paper-based job cards refer engineers to maintenance manuals that explain how to perform the work instruction. These maintenance manuals are usually available to the engineers in paper or CD-ROM format. To refer to them the engineer must stop the maintenance task, go to a computer terminal or library, search for the relevant material and read through it, before returning to the maintenance task.

eCHECK targets these areas by addressing the lack of integration between these two core elements by providing an electronic job card system for accessing and performing maintenance procedures. The eCHECK system provides a single point of access for engineers on the hangar floor. All relevant support information required to perform a maintenance operation is combined in an intelligent manner along with the work instructions. The electronic job card provides the engineer with direct access to information at the aircraft through the use of rugged laptops or mobile devices connected to a wireless network.

The eCHECK system enables both data gathering and retrieval. Using eCHECK, maintenance information such as task completion, defects found etc. can be inputted into the system directly. This information is transmitted back to the central data storage systems of the maintenance organisation, providing for both regulatory compliance and real time analysis of the performed operational procedures.

The system is a client/server application where maintenance engineers can run the eCHECK GUI from rugged laptops or mobile devices and managers can access eCHECK through standard PC workstations.

The main asset components are deployed via a central eCHECK server located within the MRO facility. The system is built entirely using Java technologies which provides great flexibility in the selection of the deployment server and client OS.
**eCHECK**

The core services and components of **eCHECK** are:

**Login:** this allows the user to access the **eCHECK** system through a username and a password. When the user logs into the **eCHECK** system, their preferred workspace is presented to them. The projects that they have the access rights to are displayed in the TOC and if they continue a job card already started the status of the job card from previous work is restored.

**Job card execution:** this allows the user execute a job card by walking through the individual steps to complete the task. Individual instructions can be digitally signed off or the complete job card closed upon completion. Different work flow rules can be set for the digital signature of job cards. Information is automatically sent to an MRO’s existing ERP system (e.g.: SAP). Job cards can be either routine job cards authored within the OEM’s production system or defect job cards raised by engineers and authored within **eCHECK**.

**Defect Job Card authoring:** this lets the engineer create his or her own defect job cards during the maintenance of an aircraft. A word like interface is provided to create the defect card, add instructions and link to maintenance manuals. Upon completion details of the card are sent to the MRO’s ERP or SAP system.

**Annotation:** this lets the engineer add annotations to any job card in the system, for example a comment to a step or query to planners. These can be viewed by other engineers or automatically emailed to the job card planning department.

**PDF data-pack:** **eCHECK** automatically creates a data-pack in a PDF format showing all the job cards with digital signatures including any defect cards with completion status.

**Help:** this provides the user with information on how to operate the **eCHECK** system.

**ATA Manual access:** this lets the user access and consult all the reference documentation associated with the aircraft maintenance activities. All references to ATA manuals within maintenance procedures are automatically linked to the relevant ATA manual and subchapter and are displayed when the user clicks on the manual link.

**Search:** this allows the users to search all contents inside the **eCHECK** system for occurrences of a specific text.

**Logging:** this keeps track of all user interaction with the system for auditing and compliance purposes.

**Navigator:** this provides the user with a toolbar and menu bar with which to access the features provided by iPv.

**TOC:** the Table of Contents provides a tree view style listing all MRO projects. Within each project, the user can access both the routine and defect job cards associated with a job. In addition for current projects the TOC shows completion status information on job cards within a project. Job cards can be grouped in a variety of ways, for example by Work Station, Pulse and Day.

**Benefits of eCHECK system**

- Increases MRO operational efficiencies
- Decreases paper associated with MRO operations
- Effective regulatory compliance tool, as system logs all user interactions
- Support both standard and defect job cards
- Links Job cards to Airbus and Boeing maintenance manuals
- **eCHECK** is accessible on multiple devices - workstations, tablets and mobile
- Full electronic reporting
- Automatic creation of pdf data pack of job cards
- Fully links and integrates into MRO’s existing IT systems

**Server OS Supported:**

- Linux (CentOS, SUSE Linux)
- Windows Server 2008
- Windows Server 2012

**Client OS Supported:**

- Windows 7
- Windows 8
- iPad/Android

**eCHECK** works with both Airbus and Boeing manual systems.