Process Development and Optimization for Lufthansa Technik Component Services

Lufthansa Technik Component Services (LTCS) is a 100-percent owned subsidiary company of the Lufthansa Technik AG.

With four main locations in the USA, LTCS offers an extensive bandwidth of services for aircraft components in both North and South America. Headquartered in Tulsa, Oklahoma, LTCS is responsible for serving customers with a variety of maintenance strategies. The base workshop in Tulsa is an EASA and FAA approved Repair Station. Its facilities consist of 42,000 square meters of workshop and office space located at Tulsa International Airport. Here, LTCS workshops are a center of excellence for Maintenance, Repair and Overhaul (MRO) services for Avionic, Hydraulic, Pneumatic, and Emergency Equipment components. Examples of production lines included in these are: escape slides, flight controls, galley equipment, and cockpit instruments. LTCS is on the growth path. The number of employees at LTCS has tripled since 2012. In addition, it is planned to handle more and more avionic, pneumatic and hydraulic parts in Tulsa. The entrepreneurial goal is to perform MRO processes from parts receiving and repair to redelivery at competitive turnaround times.

Development of optimized Processes for Developing and Approving Alternate Repairs and Fabricated Parts

LTCS has grown very fast within recent years. For this reason the number of processes has grown very fast and organically over the time. Due to networking alignment goals with other LHT facilities, there is an effort underway to harmonize and streamline processes. Accordingly, LTCS has potential for process improvement. LTCS’s Production Engineering is blazing a new trail with parts fabrication within Alternate Repairs. With locally sourced Fabricated Parts, LTCS could save costs, lead time and could also increase unit reliability by implementing a repair or parts fabrication process. For this reason, a process concept of the development and approval of Fabricated Parts and Alternate Repairs is developed with the Master’s Thesis called „Development of optimized Processes for Developing and Approving Alternate Repairs and Fabricated Parts“.

Process Concept

The process concept is developed to be implemented into the process oriented document and management system of the Lufthansa group called IQ Move. IQ Move documents all processes that every LHT employee needs for his daily work. Its objective is to ensure that every employee can find all relevant and valid process descriptions and linked documents with little effort.

IQ Move processes are constructed out of process maps, process displays and information windows. For a coarse level of detail, process maps (see figure 2) are used. The process displays (see figure 3) represent business and sub-processes. There are also information windows (see figure 4) which contain technical details of the process steps. The process map shows the processes schematically. The user may simply click on one of the processes to see the details of that process with all of its activities and associated documents. For any particular process, a swim lane diagram is used. This flowchart describes the chronology of steps that are part of the process and also shows how departments (or persons) interact with each other in order to complete the process. It visualizes clearly a logical sequence of all activities.

Table 1 contains a legend for IQ Move symbols. This notation is used for the process concept of the developing and approving processes for LTCS’s Fabricated Parts and Alternate Repairs.

References:
1. LTCS: LTCS About Us. https://www.lht-component-services.com/about-us — access by 2010-07-29

Table 1: IQ Move Notation, own design

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
<th>Notation</th>
</tr>
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<tbody>
<tr>
<td>Process</td>
<td>A process or activity is performed by one or more persons to achieve a specific result or outcome.</td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>An activity is an action that is performed by one or more persons to achieve a specific result or outcome.</td>
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<tr>
<td>Doceen</td>
<td>A doceen is a document or reference that is used to describe the process.</td>
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<tr>
<td>Sequence</td>
<td>A sequence is a logical flow of steps that are performed in a particular order.</td>
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<tr>
<td>Flow</td>
<td>A flow is a graphical representation of the logical sequence of steps.</td>
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<tr>
<td>Possible Sequence Flow</td>
<td>A possible sequence flow is a flow that may or may not be followed depending on the circumstances.</td>
<td></td>
</tr>
<tr>
<td>Lane</td>
<td>A lane is a container for a sequence flow.</td>
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Figure 1: LTCS location Tulsa, Oklahoma, http://www.lht-component-services.com/company

Figure 2: Example of Process Map, own design

Figure 3: Example of Process Display, own design

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