

48th SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE  
ACTIVITIES (D5)

## Knowledge management and collaboration in space activities (2)

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## DEVELOPMENT OF KNOWLEDGE MANAGEMENT UNDER THE TECHNOLOGY TRANSFER

**Abstract**

Kazakhstan is a developing country with large space ambitions. In 2014, Kazakhstan launched two remote sensing and one-telecom satellites. In addition, Kazakhstan is in the process of creating a large, state of the art AIT facility, manufacturing, and testing facilities for space application in Astana city. This paper is related to the creation of workshops and laboratories in cooperation with Airbus Defense and Space. The project includes technology transfer for MLL, sun sensor, harness, precision mechanics and PCB assembly.

The main purpose of the paper is to describe the process put in place by Ghulam and Airbus DS for ensuring a successful in the context of developing country. 6 main stages have been identified

1) Selection of the appropriate technology; 2) Selection and Installation of the requested machines and tools; 3) Establishment of quality system; 4) Selection and training of the staff; 5) Transfer of the technology; 6) Certification of the facilities.

The first task consists of a careful evaluation of the selected technology, in view of the ability of transferring the technology on one side and the capacity of adapting the technology on the other side; technologies shall be robust and have a good lifecycle and commercial perspectives.

The selection of the machines is another big topic. A major design stage has allowed the selection of the machines and tools adapted to the selected technologies and expected workload. It represents a key factor for the design of the building, which will host the workshops and the laboratories

A robust and efficient Quality Management System is the core of the entire technology transfer to ensure the successful operations of the workshops, with the quality level requested for space application. The initial goal is ISO 9001-2015, with future extension to EN 9100 and 14000.

Selection and extensive training of the staff is also currently going on. It is a 2 step process, which first includes the training at our partner's premises and then on job training by our Partner in Astana. Finally, the workshop certification will be achieved through the successful manufacturing of sample parts and equipment by Ghulam under the supervision of Airbus DS in Astana.

This article provides the live insights and the lessons that the company had learned during the first stages of project as well as provides guidelines in order to achieve great results, including a quality oriented Company culture.