BIOLAB CREW TRAINING

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ABSTRACT

In order to return optimum scientific data for the evaluation on ground astronauts have to be efficiently trained on facility operations and the science background of the experiments. The European Astronaut Centre (EAC) provides training to all astronauts assigned to experiments on the BIOLAB research facility of Columbus. This training primarily uses the full scale BIOLAB training model at EAC.

1. TRAINING DESIGN FOR BIOLAB

EAC is responsible for the planning and implementation of crew training on the European contributions to the ISS. BIOLAB is one of the four major research facilities on board the COLUMBUS module.The development of Astronaut Training follows the Instructional Development Process (IDP; see figure 1). The IDP is a process used to **plan**, **design**, **develop** and **evaluate training**. It is systematic, objective-oriented and it includes **validation** and **feedback**.

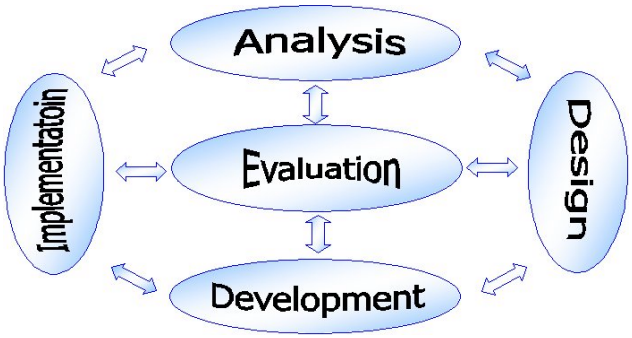

Fig.1 Instructional Development Process (IDP)

For BIOLAB despite of its highly automated design more than 300 crew activities have been identified. The IDP resulted in a generic curriculum containing about 40 training hours for a specialist qualification on this facility (Figure 2). The training is structured in theoretical classroom sessions and practical demonstration - performance sessions. The actual training needed for the assigned crew member depends of course on the increment specific tasks and results in an increment specific lesson flow wich may be more extensive or reduced in scope than the generic one.

Fig.2. Generic Curriculum and Lesson Flow

2. BIOLAB TRAINING MODEL

The practical training part uses the BIOLAB Training Model (Fig. 3) located at EAC. Two trainees work together with one instructor to learn first of all the safe operation of this complex facility. The second important aspect is the study of the scientific aspects of the experiments to make sure that the scientists receive the required data.

Fig. 3. BIOLAB Training Model at EAC