

SPACE OPERATIONS SYMPOSIUM (B6)  
Human Spaceflight Operations (1)

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## A PROPOSAL OF VISUAL GUIDELINES FOR ON-BOARD PROCEDURES

**Abstract**

Procedures have been the main instrument to provide instructions to the crew in orbit since the beginning of human spaceflight. It is fundamental that a procedure be clear, synthetic and most of all leave no room for misunderstanding or doubts. Through years of experience and improvements, agencies have developed guidelines, standards and tools to achieve the desired content, layout and formatting of the on-board procedures. However, procedures are not only made of text but also increasingly include visual aids, like schematics, drawings and pictures. These visual aids have a huge value in term of efficiency of communication. However, visual aids have been less targeted by the guidelines and standards, with no clear criteria for quality, presentation or use. Since in the future, visual aids will have a large presence and role in the procedures and on-board tools, we believe it is necessary to analyze the current use as well as the foreseen future role of visual aids, and produce guidelines and standards for procedure authors, and media creators. Based on examples past and current procedures, this paper first identifies the limitations, potential improvements or remarkable use of visual aids. The main focus will be on payload operations aboard the International Space Station. Then, a framework is established for the use of visual aids. Evaluation criteria are defined, based on and supported by theories and concepts borrowed from related fields of studies where visual language are commonly used (communication, visual representation, photography, cinema). Finally, a set of guidelines is stated, as well as recommendations on how those guidelines could be used in the authoring processes.