Name(s):	**Danny Gleeson MSc., Milos Melicher MSc., David Lowney**
Title(s):	Space Business Development Manager, Space Engineering Manager, Systems Engineer
Company/ Organization Name:	Curtiss-Wright

Paper Title:	**The use of Space Qualified COTS Data Handling Equipment for the (Title submission incomplete)**

Abstract:

The IXV (Intermediate Experimental Vehicle) is a flying test-bed for the development and flight-testing of the technologies and critical systems for Europe's future autonomous controlled re-entry missions from low Earth orbit. The data handling system in the IXV spacecraft was developed using COTS (Commercial Off The Shelf) Flight Test Instrumentation (FTI) equipment from Curtiss Wright. This COTS FTI equipment is rugged, compact and state of the art and was ground qualified for use in the IXV mission and for launch on the Vega launcher system.

In recent years there has been a trend towards the wider use of COTS equipment in space missions. This trend has been mainly driven by the restrictions in R&D budgets and a growing demand for shorter design cycles.

Designers of spacecraft systems have been encouraged to identify and overcome the obstacles that previously prevented them using COTS products for space missions. One approach taken by designers in their endeavor towards closing the gap between the unique requirements of space applications and the properties of COTS products focuses on characterization of commercial technologies and their optimization for space environments.

The first step in this approach involves the analysis and tests required to determine the characteristics of COTS products such as reliability, robustness, safety and relevant environment properties. This step is followed by the assessment of product characteristics against mission requirements. Identified shortcomings are then addressed by an appropriate system design with the objective to lower any potential risks to acceptable levels.

This paper discusses the selection and development a COTS data handling and recording equipment solution on board the IXV spacecraft. It describes the techniques used to characterize and qualify this equipment for the IXV space mission.

This paper will describe the real life practical experience with this approach in the qualification of the COTS data handling system for the IXV spacecraft and describe where, if the use of highly specialized custom built space equipment is not required, COTS products provide fast and cost-effective solutions. The success of the IXV mission demonstrates that COTS products are particularly suitable for short space mission or missions in low-orbit.