

SpaceOps 2014 Abstract	Author list: <ul style="list-style-type: none">- Patty Montgomery- A. Scott Reeves--
Keywords: ISS, Payload Operations	
Abstract Title: Designing an Alternate Mission Operations Control Room	
<p>Abstract text:</p> <p>The Huntsville Operations Support Center (HOSC) is a multi-project facility that is responsible for 24x7 real-time International Space Station (ISS) payload operations management, integration, and control and has the capability to support small satellite projects and will provide real-time support for SLS launches. The HOSC is a service-oriented/highly available operations center for ISS payloads—directly supporting science teams across the world responsible for the payloads.</p> <p>The HOSC is required to endure an annual 2-day power outage event for facility preventive maintenance and safety inspection of the core electro-mechanical systems. While complete system shut-downs are against the grain of a highly available sub-system, the entire facility must be powered down for a weekend for environmental and safety purposes. The consequence of this ground system outage is far reaching: any science performed on ISS during this outage weekend is lost. Engineering efforts were focused to maximize the ISS investment by engineering a suitable solution capable of continuing HOSC services while supporting safety requirements.</p> <p>The HOSC Power Outage Contingency (HPOC) System is a physically diversified compliment of systems capable of providing identified real-time services for the duration of a planned power outage condition from an alternate control room. HPOC was designed to maintain ISS payload operations for approximately three continuous days during planned HOSC power outages and support a local Payload Operations Team, International Partners, as well as remote users from the alternate control room located in another building.</p> <p>This paper presents the HPOC architecture and lessons learned during testing and the planned maiden operational commissioning. Additionally, this paper documents the necessity of an HPOC capability given the unplanned HOSC Facility power outage on April 27th, 2011, as a result of the tornado outbreak that damaged the electrical grid to such a degree that significantly inhibited the Tennessee Valley Authority's ability to transmit electricity throughout the North Alabama region.</p>	