**System Safety Engineering and Operational Safety Management Systems**

**Bringing two successful approaches together**

Presented by Bob Dodd and Tony Zenga

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**Abstract.**

In technical high risk industries such as transportation, oil and gas, and chemical process industries, there have been two critical streams that have added immeasurably to safety of operations. One has been the development of sophisticated system safety engineering methods to deliver highly safe technology. The second has been the gradual implementation of safety management systems for the operations to provide continually improving safety performance.

While these safety initiatives have been very successful there are gaps between the two worlds. These gaps are emerging as potential threats to further improvements in safety particularly with the continued progress towards greater automation and the associated growing tight interconnection of systems both technical and organizational.

The gaps encompass conceptual differences, data and analysis separation and organizational and regulatory barriers.

This presentation describes the basis and strengths of existing approaches to the separate disciplines, outlines the nature of the gaps and provides some examples and outlines potential paths towards better solutions.

Bios:

Bob Dodd is the Senior Director, Risk Management for Aloft Aviation Consulting and has spent thirty years in safety risk management in both the public and private industry roles. Until late 2010 he worked in the safety function of Qantas. Initially focused on establishing safety management systems and basic risk management capability his role evolved to more general management of safety across both operational and occupational safety areas. His achievements include the development of a state of the art safety performance indicator system based on risk, building an integrated safety review process, and, more recently, the use of bowtie risk models to support continuous estimation of risk levels, threat vulnerability and control effectiveness.

Prior to joining Qantas Bob held senior roles in aviation safety regulation – managing safety promotion, regulatory standards redevelopment program with CASA in Australia. He has also held a number of roles in safety investigation and analysis with both TSB in Canada and BASI (now ATSB) in Australia.

Bob has presented at numerous seminars and written articles on the subjects of safety and risk management.

Tony Zenga is the ISSS Canada Chapter President and the president of CMTIGroup Inc. Tony is a Systems/Specialty Engineering consultant with over 30 years of experience in development, analysis, and management of large scale Safety Critical systems in; Aerospace, Space Systems (ISS and various Satellite programs), Air Traffic Control Systems (ATC), Mass Transit, Transportation and Defense programs. He has expertise in hardware and software Mission Assurance, System / Software Safety, Reliability and System life cycle development & analysis.

On behalf of his international customers, Tony has developed several System Safety methodologies and respective program safety cases. The system safety Engineering analysis and deliverables were essential for the successful certification and revenue service of respective systems.