
SAFETY/SECURITY IN COMPLEX SYSTEMS

BUSINESS CASE

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VERSION HISTORY

Version Number	Implemented By	Revision Date	Approved By	Approval Date	Description of Change
1.0	<i>David Auda</i>	<i>3/29/16</i>	<i>M. Banghart</i>	<i>3/29/16</i>	<i>Original draft</i>

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1 EXECUTIVE SUMMARY

Safety and Security of complex systems that integrate hardware, software, artificial intelligence (decision algorithms) and human interactions are not adequately assessed for potential safety issues during concept development using traditional main stream Reliability/Hazards/Safety preventive methods/tools. This leads to problems in the use of the systems that defy necessary causal attribution, prolonging the potential safety risk and consuming resources in an ineffective and inefficient manner. Improved preventive methodologies and causal investigative measures need to be evolved to address this growing issue. This project objective is to create a Technical Committee to address this challenge and provide support to any interested parties faced with this challenge.

2 INTRODUCTION

2.1 PURPOSE OF BUSINESS CASE

The purpose of this business case is to define the scope of the work, anticipated resources and financial needs in order to establish the appropriate leadership core team and participate in ongoing efforts in industry and academia pursuing the same goals.

3 GENERAL PROJECT INFORMATION

3.1 PROJECT DESCRIPTION

Business Need

The need is to be able to prevent safety and security related issues in complex systems and in the event that they do appear, provide evolved methodologies and tools to assist in the acceptable resolution of such issues, for the betterment of society as a whole.

Goals/Scope

Establish the appropriate teams and interest groups develop a charter of the work, separating preventive from reactive approaches, and develop an appropriate body of knowledge as a reference and baseline for future work.

Risks/Issues

None identified

4 HIGH-LEVEL BUSINESS IMPACT

The first and foremost impact is to ensure the safety and security of the users and/or recipients that interact with or are potentially affected by adverse consequence related to failures of these systems. The second impact will reduce the expense and resource consumption that accompanies safety related consequence and/or security breaches.

4.1 FINANCIAL CONSIDERATIONS

In order to gain the needed access to industry and academia ongoing work will require travel and expenses. It may be advantageous to host special events to bring together identifiable stakeholders and safety experts for the purpose of investigative analysis workshops or conferences. This would incur a need for travel and expenses for these individuals as well as hosting expenses such as venue and refreshments. ROM estimate for 2016 is \$4k, detailed expenses tbd and itemized in initial strategic plan. (travel, meetings hosted, printed materials for planned RD events in 2016, etc.)

4.2 PRELIMINARY COLLABORATION STRATEGY/PLAN

There are a number of efforts in a variety of industries and disciplines that are making progress in this area and establishing collaborative relationships worth

them will be included in the scope. One of the most visible industries for safety and security is the automotive/transportation industry and concentrated effort will be to identify the appropriate forums, regulatory bodies, committees, etc. to provide insight into the governance of the industry by the development of standards and regulations. Other disciplines will be included as identified and resourced as permitted by the participation levels and interest groups.

4.3 PRELIMINARY WORK BREAKDOWN STRUCTURE

Establish a core team

Prepare and deliver global webinars to bring visibility to the effort

Draft an initial strategic plan

4.4 ASSUMPTIONS AND CONSTRAINTS

Based on identifiable ongoing work in various sectors and key stakeholders it is assumed that this effort will grow quickly. Constraint is on initial time investment due to loading as this is a volunteer effort.