

Chapter 5 – CONCLUSIONS AND RECOMMENDATIONS

When MSG-019/TG-016 was established, both the NATO and the distributed simulation communities had realized a need for guidance about the VV&A of federations. The efforts of this Task Group addressed this need for both communities. In the course of addressing the common need for federation VV&A, the Task Group began to develop a baseline view of VV&A. This view emphasized the lack of a universal model for federation VV&A processes due to divergent national perspectives and needs. The Task Group determined that the lack of this consistent methodology was hampering NATO's ability to develop shared simulation federations. Resolving these disparities required developing a consistent understanding of what VV&A is and how to apply it to achieve the best results. Even though the member nations came from different perspectives, they were able to converge onto a single unified model of federation VV&A processes. Thus, the baseline and the results from the CConVV&A [21] resulted in a decision to merge the efforts of this Task Group and the SISO VV&A Overlay drafting group. This merge expanded the focus of this Task Group to go beyond preparing a technical report to actually producing a VV&A Overlay standard product. The Task Group also identified several terms needed to describe VV&A processes for federations and developed definitions for these terms using existing standard definitions.

Formalizing the Overlay as an IEEE standard was determined to be the most appropriate standardization approach as it provides international recognition and access; co-locates the Overlay with its companion document IEEE standard 1516.3 for the HLA FEDEP [20]; and provides maintenance and management of the Overlay by IEEE. The proposed IEEE standard (1516.4) addresses the needs of both the NATO and SISO communities for a VV&A Overlay to the FEDEP.

This Task Group succeeded because of extensive collaboration with other international groups including SISO, REVVA and ITOP. The tight coupling between the NATO and SISO groups resulted in a better, more widely applicable Overlay (e.g., government, industry, and academia). The collaboration benefited NATO by directly coupling the MSG product to an internationally recognized standards body and benefited SISO by ensuring early and extensive international input to the final product. This collaborative effort could serve as a model for future joint M&S standards initiatives.

While the Task Group feels that enormous strides have been made with the development of the VV&A Overlay, still more work is needed to increase the effectiveness and efficiency of the VV&A processes. Particular areas to be addressed include case studies to mature the Overlay, tailoring the VV&A processes based on user risk management, and effective communication of risk to program management.

Based on the above conclusions, the Task Group makes the following recommendations:

- NATO should adopt Appendix 1 as an interim Standardization Agreement (STANAG) until the IEEE 1516.4 standard is issued and then revise the STANAG to adopt the IEEE standard.
- MSG-054, the follow-on study group, should:
 - Participate in the IEEE 1516.4 balloting process;
 - Monitor on-going VV&A case study initiative and incorporate suggested improvements to the Overlay during the balloting process; and
 - Study the relationship between user risk, acceptance criteria, and tailoring of the VV&A process.
- NATO should consider adopting similar collaborative relationships with international standards bodies as appropriate.

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