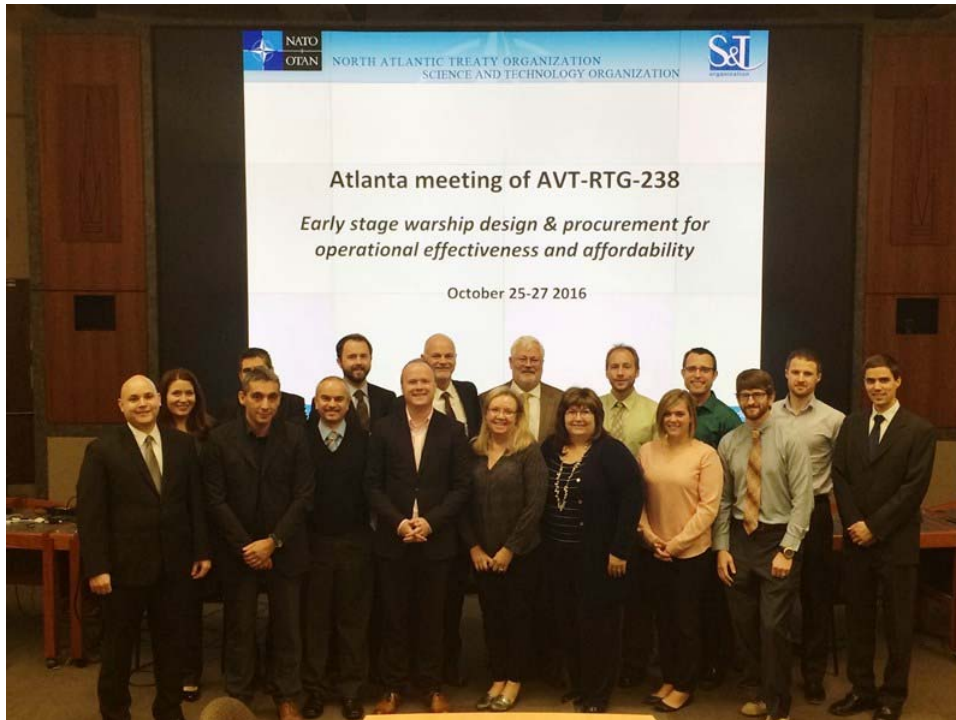


## Research Task Group AVT-RTG-238 met in Atlanta, Georgia, USA



On October 25, 26 and 27, members of NATO AVT Research Task Group 238 met at the Georgia Tech Aerospace Systems Design Laboratory.

Objective of the RTG is to develop both the processes and the tools required by the participating nations to enable the inclusion of effectiveness and affordability in the earliest stage of the warship design process, i.e., during the concept exploration phase in which requirements and budgets are formulated and balanced.

Participating nations are Italy, The United Kingdom, The United States and The Netherlands, with additional attendance from Germany on occasion. Participating organisations include navies, procurement & research agencies, industry and academia, with typically 15 to 20 persons attending meetings.

After a planning year in 2014, the group has worked with considerable effort on developing, improving and applying the capability offered by the inclusion of effectiveness and affordability assessments in early stage warship design. Main driver of the progress were associated national R&D-programs for which the RTG served as a catalyst by offering a venue to share results and discuss lessons-learned and common pitfalls.

The key benefit of this new capability is that it enables the consequences of changes in operating environment, threat, CONOPS, technology and budget to be comprehensively assessed and included in cost-benefit analysis by which which capability and budget are balanced.

Purpose of the Atlanta meeting, roughly 2/3rd in the RTG's programme of work, was a first demonstration of an integral visualisation approach in which data gathered by ship design studies, operations analysis and costing were combined to assess, for example, the relative operational capability of alternatives with equal cost. The results of three test-cases: two naval surface combatants, and a mine-countermeasures vessel, served as input. The hosting venue: GA Tech, was chosen because of its Collaborative Visualization Environment, a facility which supports the visualisation of large data-sets such as those developed by the RTG (which was funded by the US Office of Naval Research, one of the key participants in the RTG).

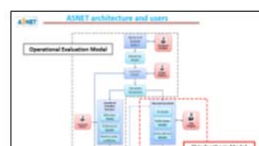
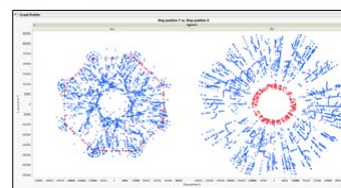
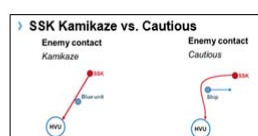
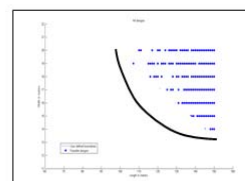
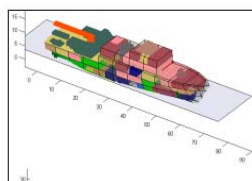
Even though the RTG has considerable work ahead to complete the test-cases and the visualisation approaches and to draw conclusions from the considerable body of work, several of the participating nations are already using some of the results in national warship procurement projects, thereby illustrating the benefits of the approach developed by the RTG.

2017 will see the RTG focus on finishing its program of work and documenting its findings. A follow-on RTG is being considered, which is likely to focus more on gaining experience with the approach via complex demonstrations, sharing lessons-learned and vastly improving the visualisation of results to gain better understanding from the data.



### AVT-RTG-238 has resulted in new or improved capability w.r.t.

- Design processes
- Ship design tools
- Operational models
- Costing models
- Visualisations of output





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