NL RESEARCH PROGRAMME ON PROTECTION OF FIELD STRUCTURES AGAINST THE EFFECTS OF ENHANCED BLAST WEAPONS

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It is acknowledged that blast weapon technology is proliferating and that troops during missions out-of-area are vulnerable for resulting enhanced blast and thermal effects. Therefore, the NL/MoD has tasked TNO to define and conduct a four year defense research program on protection of field structures against the effects of enhanced blast weapons (EBW).

This NL research program is strongly related to the four year Canadian Technology Demonstration Program on "Force protection against enhanced blast". Based on an implementing arrangement to the MoU between the ministries of Defense of Canada and The Netherlands concerning cooperation in defense science and technology, DRDC Suffield and TNO are sharing and exchanging theoretical and experimental data to develop structure vulnerability assessment models. The NL research program is subdivided in the following research topics that will be addressed in the years 2004 - 2007:

- Threat/scenario analysis of EBW;

- Measurement techniques;

- Development of prediction models: explosion effects, blast propagation, structural response of field structures, ammo- and POL-storage;

- Development of a consequence/risk-analysis tool.

The paper describes the research program goals, -approach and -deliverables in detail. Some of the first program results, which are based on the (preliminary) results and conclusions of the Elk Velvet 2 and 3 trial series that were conducted by DRDC Suffield in 2004 and 2005, will be presented. TNO participated in these trial series, where blast propagation and structural response of various field structures were measured. These (and previous) data form essential input for the various prediction tools to be developed within the research program. A more detailed overview will be given in the companion paper presented by Rhijnsburger.