

NLD MODEL SHARING EXPERIENCES

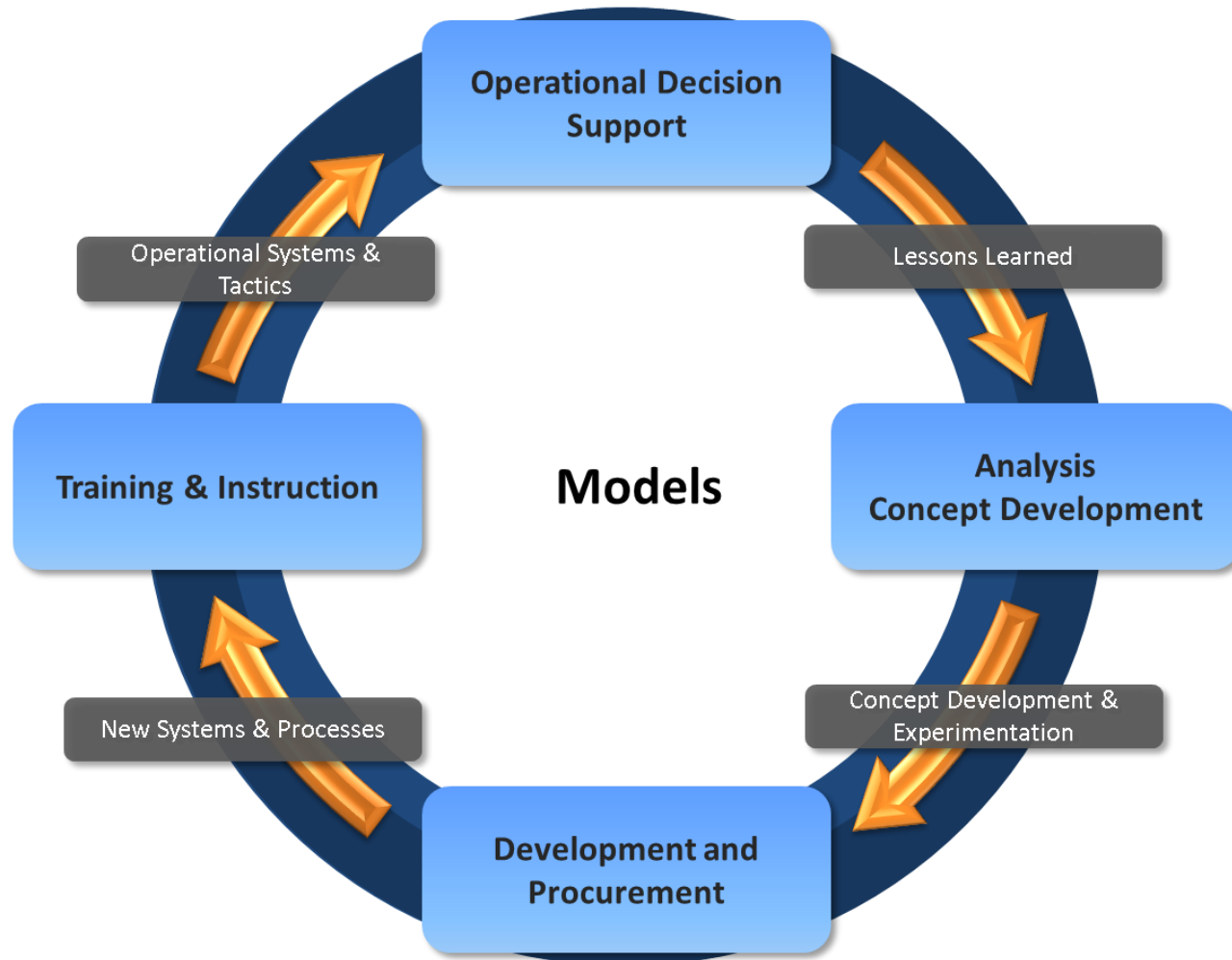
SAS-115

SMART cooperation on Operation Analysis simulation models

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CAPABILITY LIFE CYCLE OF (OA) MODELS



MANY AGREEMENTS IN PLACE

- › Memoranda of Understanding on co-operation in defence science and technology
- › Bi- and trilateral agreements between NLD and
 - › AUS, CAN, DEU, FRA, NOR, SWE, UK, USA, ...
 - › From unclassified to secret

USA-NLD DEA-A-94-TN-1529 ON ADVANCED DISTRIBUTED SIMULATION TECHNOLOGY

› **Modular Semi Automated Forces (ModSAF) (1998-2004)**

- › Objective: evaluation and gain knowledge for combat simulation systems
- › USA (PEOSTRI) provided:
 - › Software and documentation of the programme
- › NLD (TNO and RNLA) provided:
 - › Combat Instruction Sets (CIS) at single vehicle, platoon and company/team level for units of the Royal Netherlands Army (RNLA) and GENFOR
 - › Software application Computer Mediated Advisor for Instructional Development (COMAID)
 - › Issue: NLD also created some NLD specific modules, needed updating for new releases of ModSAF

USA-NLD DEA-A-94-TN-1529 ON ADVANCED DISTRIBUTED SIMULATION TECHNOLOGY

- › **Close Combat Tactical Trainer SAF (CCTT SAF) (2002-2003)**
 - › Objective: evaluation and gain knowledge for combat simulation systems
 - › A FMS case was set up, in order for USA (SAIC) to provide:
 - › Executable and documentation of the programme
 - › Installation and user training
 - › NLD (TNO) provided:
 - › Evaluation results

USA-NLD DEA-A-94-TN-1529 ON ADVANCED DISTRIBUTED SIMULATION TECHNOLOGY

- › **Close Action Environment (CAEn) & Integrated Unit Simulation System (IUSS) (1999-2005)**
 - › Objective: evaluation for NLD application, Soldier Modernisation Programme
 - › USA (NATICK Soldier Center) provided:
 - › Executables and documentation of the software programmes
- › NLD (TNO) provided:
 - › NLD evaluation report, preference was given to IUSS
 - › Adapted IUSS simulation models, providing expertise on among others human behaviour and team aspects, lethal/non-lethal weapons, C2 algorithms/MoPs/MoEs and Soldier Decision Making Module
 - › Results from NLD field trials

USA-NLD DEA-A-94-TN-1529 ON ADVANCED DISTRIBUTED SIMULATION TECHNOLOGY

- › **Parametric Endo/Exoatmospheric Lethality Simulation (PEELS) (2003-2005)**
 - › Objective: evaluation for NLD application for BMD studies
 - › USA (Missile Defense Agency) provided:
 - › Executable and documentation of the programme
 - › NLD (TNO) provided:
 - › Existing reports regarding ballistic missiles and ballistic missiles defence
 - › Results of NLD studies or experiments with PEELS

USA-NLD PROJECT AGREEMENT IWARS

- › **Infantry Warrior Simulation (IWARS) Toolkit Enhancement (2004-now)**
- › Objective: collaborate in the development of modeling, simulation, and assessment technologies to enhance Combined Arms Dismounted Combatant Operations
 - › USA (NATICK Soldier Center) provided:
 - › Software and documentation of the programme
 - › Training and information on future/desired functionality
 - › NLD (TNO) provided among others:
 - › paradigms for Combined Arms Dismounted Combatant technology assessment (e.g. on Non-Lethal Weapons and Soldier Load)
 - › metrics for Combined Arms Dismounted Combatant Operations involving extended missions and elements of Stability and Support Operations

ANNCP WORKING GROUPS

- › Anglo (DSTL) – Netherlands (TNO) - Norwegian (FFI) MoU
- › Different models being shared for evaluation purposes, no money exchange
- › Different working groups:
 - › Working Group I – Physics and Electronics
 - › Working Group II – Chemical Biological Defence
 - › Working Group III – Explosives and Munitions
 - › Working Group IV – Human Factors
 - › Working Group VI – Aeronautical Research
 - › Working Group IX – Operational Analysis
 - › Examples:
 - › ANNCP IX.6 Helicopter Mission Effectiveness
 - › ANNCP IX.11 Future Escort Vessels
 - › ANNCP IX.12 Maritime Support to Land Operations
 - › ANNCP IX.13 C2 of Inshore AAW
 - › ANNCP IX.15 Model Strategy and Common Modelling issues

CP IX.25: MARVEL AND PSOM

- › Collaborative Project iX.25 “MARVEL and PSOM: exchange and model evaluation” (2011-2015)
- › UK and NLD
- › UK provided:
 - › Peace Support Operations Model (PSOM)
 - › Training and support for use
- › NLD provided:
 - › Method to Analyse Relations between Variables using Enriched Loops (MARVEL)
 - › Training and support for use

DEMAND FOR “NEW” MODELS

- › Trend to be seen in NATO:
 - › The focus of military models was on combat and logistics (1990's)
 - › Then the focus shifted to modelling Peace Support operations (2000's), few or no investment in maintaining the “old” combat and logistic models

- › Now a renewed interest in combat models, our modelling toolbox is not complete

SOME OBSERVATIONS

- › Many advantages
- › Implementing specific requests depends on model owner
- › Sharing among multiple partners