

| LOI-NEC                 | Document type  | Document identity | Origin date       |
|-------------------------|----------------|-------------------|-------------------|
| ERG No.1 05/100.054/008 | Report         | PM373193          | 2006-05-30        |
| Prepared by             | Classification | Issue index       | Issue date        |
|                         | Unclassified   | 1.0               | 2006-09-07        |
| Approved by             |                |                   | No. of appendices |
|                         |                |                   | 0                 |

## NECP Public Executive Summary



|                               |   |
|-------------------------------|---|
| Pre-study acronym             | NECP  |
| Date of preparation           | 12 June 2006  |
| Delivery                      | D.3.3   |
| List of participants          | <ol style="list-style-type: none"> <li>1. BAE SYSTEMS IST</li> <li>2. EADS DS SA / DCS</li> <li>3. EADS Deutschland</li> <li>4. Saab</li> <li>5. Selex Sistemi Integrati</li> <li>6. Sener</li> </ol> |
| Coordinator name              | Jan Larsson   |
| Coordinator organization name | Saab  |
| Coordinator email             | Jan.larsson@saabsystems.se  |
| Coordinator fax               | +46 8 580 87222   |



## NECP Public Executive Summary

---

### Table of Contents

|  |   |
|--|---|
| SCOPE .....  | 3 |
| IDENTIFICATION .....   | 3 |
| PURPOSE .....  | 3 |
| DOCUMENT OVERVIEW .....  | 3 |
| REVISION HISTORY .....   | 3 |
| ACRONYMS, ABBREVIATIONS AND DEFINITIONS .....                          | 3 |
| THE VISION FOR THE NEC EXPERIMENTATION PROGRAMME (NECEP) .....         | 4 |
| RESULTS AND CONCLUSIONS .....  | 5 |
| BACKGROUND AND OBJECTIVES .....  | 6 |
| 6 NATIONS LOI FRAMEWORK AGREEMENT .....                                | 6 |
| AIM OF THE LOI-NEC PRE-STUDY (NECP) .....                              | 6 |
| NETWORKED ENABLED CAPABILITIES EXPERIMENTATION PROGRAMME (NECEP) ..... | 6 |



## NECP Public Executive Summary

### Scope

#### Identification

This document is a delivery in the Network Enabled Capability Study (NECP).

#### Purpose

The purpose of this document is to give a project summary for internal (unrestricted) use.

#### Document overview

This document is delivery D.3.3 of NECP according to contract no 05/100.054/008 between the Western European Union (WEU) represented by the WEAO Research Cell and Saab AB.

#### Revision history

| Issue index | Issue date | Edited by | Revision description |
|-------------|------------|-----------|----------------------|
| 1.0         | 2006-09-07 | STJNLA    | Final version        |
|             |            |           |                      |
|             |            |           |                      |
|             |            |           |                      |

### Acronyms, abbreviations and definitions

| Acronym | Definition   |
|---------|--|
| NECP    | Network Enabled Capability Pre-study                 |
| NECEP   | Network Enabled Capability Experimentation Programme |
| WEAO    | Western European Armament Organisation               |
| WEU     | Western European Union                               |



## NECP Public Executive Summary

### The vision for the NEC Experimentation Programme (NECEP)

The Vision identifies the purpose of the programme as being:

*“To initiate cooperation on NEC, focussing on the key element ‘Shared Situational Awareness’ in a European context. The project should be a step forward towards launching a European Service Orientated Architecture (SOA) and framework needed as a technical foundation for NEC”*

The Vision defines the key government, military & industry participants in the programme and emphasises the necessity of committing National Authority and Operational Military Representatives to work collaboratively with industry on the programme.

The type, content, implementation and commercial implications of interventions are discussed. The need for MOD “Intervention Champions” is identified, to maximise the probability of experimental evidence being exploited.

The purpose of the continued programme therefore is to:

*“To use Synthetic Environment based Warfighting Experimentation to provide evidence to influence procurement, deployment and use of Network Enabled Capability (NEC) in the context of European coalition operations”*

A framework for the production of battlespace architectures has been identified, to communicate consistently and clearly, operational systems and technical representations of the military organisations and systems being experimented upon.

Physical considerations of the programme are discussed, including facilities for the conduct of operations management, experimental design, synthetic environments and rapid application development.

It is an aspiration of the overall NEC LOI programme to provide a virtual NEC test bed. This aspiration will be satisfied by the provision of a core management & engineering capability of personnel drawn from the member MoDs and Industry Consortium, and access to a range of Synthetic Environment facilities that will be constituted to provide the most appropriate and cost effective solution to each Experiment.

A business process and organisational roles are proposed, which provides an appropriate level of oversight while allowing efficient development of experiments. The former is based closely on the UK NITEworks model.

It is proposed that a rapid experimental tempo is set, to maximise interest, enthusiasm and relevance of the Interventions while minimising the costs associated with protracted experimental campaigns.

Finally, information management covers the issues of IPR, security and shared working environments.



## NECP Public Executive Summary

### Results and conclusions

The pre-study has produced a vision for the future networked capabilities of the European armed forces based on joint and coalition operations including civilian governmental and non-governmental organisations.

Within this vision the pre-study has:

- Defined and agreed a framework within which Warfighting Experimentation can be carried out within a collaborative European environment;
- Produced an outline example of an experimental design;
- Produced and used a process for taking relevant Operational Questions from the Customer community and deriving appropriate Battlespace context, capability requirements, and timelines;
- Used the process to derive a set of prioritised candidate Experimental Questions, which may be taken forward into a full development programme.

The experimental questions have been prioritised in a voting process between the LOI-nations. The six questions having highest scores have been suggested for the experiments.

The architecture work has led to a definition of experimental set-ups for the future programme including guidelines for experimentation design.

A broad scenario and vignettes corresponding to experimental questions have been design as a number of DoDAF views.

A procedure for consistent down-selection of assets in experimental design has been established.

The base for information sharing and Shared Situation Awareness is a European CROP generating system based on a European COP. The CROP is a role-based subset that may also be generalised. This has been identified as a capability gap that must be filled.

In the same manner have procedures for functionality and measures of effectiveness (MoE) and performance (MoP) been established. The functionality process is based upon information grids and Service Oriented Architecture (SOA). The MoP's and MoE's are defined based on NATO standards.

Simulation infrastructures are suggested and an inventory of simulators and simulation facilities are provided.

Finally a comprehensive Network Enabled Capabilities Experimentation Programme (NECEP) is outlined in detail.

During the pre-study the industry group has come to the understanding that only a well defined experimentation programme will give value for money. For such experiments to be successful a careful selection of the number of experiments, which experiments to perform and how to design these must be performed. The scope of this work reaches beyond the pre-study objectives and the final design of experiments must be left for the implementation of the programme.



## NECP Public Executive Summary

---

### Background and objectives

The LOI-NEC Pre-study has as an objective to establish a European Industry Cooperation regarding Network Centric Warfare. The project involves a large number of companies from France, Germany, Italy, Spain, Sweden and UK, the six nations co-operating under a Framework Agreement from year 2000. SAAB of Sweden leads this industry group. The pre-study is over a 9 months period. The plan is that the pre-study will be followed by a three year Demonstration Programme. Contracting agency for the pre-study was WRC. Now the contract has been transferred to EDA. Sweden is leading the 6-nations government group that has the task to monitor the programme and approve milestone.

#### 6 Nations LOI Framework Agreement

The LOI-NEC Pre-study is an initiative within LOI Subgroup of Research and Technology. LOI (Letter of Intent) is a Framework Agreement from year 2000 between France, Germany, Italy, Spain, Sweden and UK concerning: "Measures to facilitate the restructuring and operation of the European Defence Industry". LOI-FA is lead by an Executive Committee and has 6 sub-committees, one that is dealing with Defence-related Research and Technology. Chairmanship is rotating, currently Germany chairs the LOI Research and Technology Group.

#### Aim of the LOI-NEC Pre-study (NECP)

The aim of the pre-study is to define a European demonstration programme for the promotion of Shared Situational Awareness. The programme shall encompass / represent as well as possible the defence industry in the LOI-nations. It shall also address relevant questions in an operational environment of current interest. This leads to requirement on joint operations between forces of different type and nationality and interoperability between these forces. In this study emphasis will not be on solving interoperability problems but rather to highlight existing and possible solutions to show the state-of-the-art regarding NEC.

### Networked Enabled Capabilities Experimentation Programme (NECEP)

LoI NEC Experimentation Program (NECEP) is devoted to perform experimental activity in an six European LoI nations collaborative framework.

It has been defined the general structure and organization of the program, the outline of the activity to be done as well as the conceptual targets to be reached.

The NECEP encompasses:

- Six (6) Experiments
- Duration 2,5 years
- Experiments launched in sequence



## NECP Public Executive Summary

---

- Each LoI-nation conducts one experiment
- All experiments are managed in an overall program management
- Established processes for selection of simulators, assets etc in the experimental design

Management structure and methodology have been proposed. Procedures are provided for detailed Program definition.