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| OPTASK Builder requirements |
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| **DRAFT V1.0** |
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|  | January 2019  The Hague |  |

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| OPTASK Builder Requirements  Draft V.1.0 | | | |
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| Vincenzo de Sortis  Arno Bijl  Frank Matheron | | | |
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|  | This document consists  of 1 pages  (including covers) |

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1. Introduction
   1. Purpose
2. This document provides the requirements for a system that support National representative and FMN network management authority (NMA) in providing the information about the FFT systems and in designing and publishing the network design (OPTASK) in a format that is both human readable and machine processable.
   1. Document Organization
3. The document is organized into two major parts. The first part details the use cases. The second part provides the supplementary specification that provides more generic requirements that are not provided in the use cases.
   1. Requirement levels in this document
4. The following requirement levels are used within this document:

* M: Must have this requirement to meet the business needs
* S: Should have this requirement if possible, but project success does not rely on it
* C: Could have this requirement if it does not affect anything else on the project
* W: Would like to have this requirement later, but won’t be in 2019
* E: External requirement that is not in scope of the OPTASK builders.

1. OVERALL description of the system
2. The system enables the network management authority (NMA) to create an OPTASK. For this purpose, the NMA needs information (via the national leads) on the national systems that participate in the operation. The system facilitates the OPTASK creation process, and specifically facilitates the collection of national participation information in an easy to use manner.
   1. SYSTEM Architecture
3. In the system architecture the following application components are presumed:

|  |  |
| --- | --- |
| 1. **Component** | 1. **Description** |
| 1. National System Description Form (SDF) Builder | 1. Enables the collection of national participation information. |
| 1. NMA OPTASK Builder | 1. Enables the OPTASK information collection and design process. |

* 1. Actors

1. The following human and system actors are interacting with the OPTASK builders systems.

|  |  |  |
| --- | --- | --- |
| 1. **Actor** | 1. **Description** | 1. **Type** |
| 1. National SME | 1. Subject matter expert for the technical details of the national systems. | 1. Human |
| 1. National Operator | 1. Operator for a national system | 1. Human |
| 1. National Lead | 1. Coordinates national activities for operations. | 1. Human |
| 1. NMA | 1. The network management authority | 1. Human |
| 1. System administrator | 1. The administrator taking care of the deployment of the OPTASK builder | 1. Human |
| 1. OPTASK consumer | 1. A national or NATO system that can consume OPTASK messages | 1. System |

* 1. Offline and Online mode

1. Both the National SDF Builder and the NMA OPTASK Builder are foreseen to have an offline and online mode of working:

* Offline mode: no connection available between the National SDF Builder and the NMA OPTASK Builder systems. This mode is a Must Have (M) requirement.
* Online mode: the National SDF Builder has a direct connection (system-to-system interface) with the NMA OPTASK Builder. This mode is a Should Have (S) requirement.
  1. Information Exchange between actors

The OPTASK creation process requires actors to exchange information between each other. We define two information carriers for the information exchanges that occur in the process. The carriers defined in this chapter are intended as abstract information objects, and are not intended to suggest how these carriers will be implemented.

|  |  |
| --- | --- |
| 1. **Carrier** | 1. **Description** |
| 1. System Description Form | 1. Contains the national participation information for exchange of information from the National actors to the NMA. |
| 1. OPTASK Message | 1. Contains the OPTASK information for consumption by a OPTASK consumer. |

1. Use cases
2. This chapter contains an overview table of the use cases and details each use case.

For each use case a flow of events is provided, describing the interactions between the actor(s) and the system(s).

* 1. Use cases Overview

|  |  |  |
| --- | --- | --- |
| 1. **USE CASE** | 1. **ACTORS** | 1. **DETAILED IN SECTION** |
| 1. **Manage OPTASK** | | |
| 1. Define a new operation | 1. NMA | 1. 3.2 |
| 1. Create (initial) OPTASK | 1. NMA | 1. 3.3 |
| 1. Modify OPTASK | 1. NMA | 1. 3.4 |
| 1. Publish OPTASK | 1. NMA | 1. 3.5 |
| 1. **Manage national participation** | | |
| 1. National Lead registers his system(s) for joining the operation | 1. National Lead | 1. 3.6 |
| 1. Manual external activity: coordinate the national actors/capability participation | 1. National Lead | 1. 3.7 |
| 1. National Lead collects information, and generates SDF using the SDF Builder | 1. National Lead, National Operator, National SME | 1. 3.8 |
| 1. National Lead collects information, and generates SDF using another tool. | 1. National Lead, National Operator, National SME | 1. 3.9 |
| 1. National Lead send back national information to NMA | 1. National Lead | 1. 3.10 |
| 1. Update of the national participation form (registration of the systems plus the technical details) | 1. National Lead, National Operator, National SME | 1. 3.11 |
| 1. Request for OPTASK | 1. National Lead, National Operator | 1. 3.12 |
| 1. Consume the OPTASK |  |  |
| 1. Consume a modified OPTASK |  |  |

* 1. Define a new operation
     1. Description

1. Before collecting participation information and designing the OPTASK the NWA will define the operation context for these actions. The basic operation information defined by the NMA will be provided to the national lead as part of the System Description Form.
2. Finally a System Description Form will be made available to the National Lead. The System Description Form will then capture the information about the national systems that will participate in the operation.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. NMA creates a new operation, containing the following information:    * The name of the operation, date, relevant POC, security classification    * The network POCs related to the network infrastructure | 1. M | 1. Both |
| 1. 2 | 1. The NMA publishes the initial page that defines the operation | 1. S | 1. Online |
| 1. 3 | 1. A request for information (notification) is published by the NMA OPTASK Builder to each of the national leads | 1. W | 1. Online |
| 1. 4 | 1. National Leads download their Capability Participation Form with operation information prefilled | 1. M | 1. Offline |
| 1. 5 | 1. NMA OPTASK Builder publishes the Capability Participation Form to the national leads | 1. C | 1. Online |

* 1. Create (initial) OPTASK
     1. Brief Description

1. Once the System Description Forms are filled out by the National actors and returned to the NMA, the NMA can create a new OPTASK. The OPTASK will define how the systems available to the operation will be utilized.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. Select the national systems participating to the operation | 1. M | 1. Both |
| 1. 2 | 1. Build OPTASK (using the information delivered by the national lead as read-only) | 1. M | 1. Both |
| 1. 3 | Validate the OPTASK | 1. M | 1. Both |
| 1. 4 | Generate the OPTASK diagram representation | 1. M | 1. Both |
|  | Generate a graphical depiction | 1. M |  |
|  | Allow modifications to improve the graphical depiction (layout) | 1. S |  |
|  | Allow modifications to improve the network configuration from the graphical depiction | 1. C |  |
|  | Allow exporting graphical depiction to a Bitmap oriented picture format (e.g. PNG) | 1. S |  |
|  | Allow exporting graphical depiction to a Vector oriented picture format (e.g. SVG) | 1. C |  |

* 1. Modify OPTASK
     1. Brief Description

1. Once an OPTASK is created it can be modified at a later date. This could be necessary when

the OPTASK design was not yet completed,

or because the system information provided by the nations is updated,

or systems leave/join the network during operation,

systems prefer to be used differently.

* + 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. NMA loads existing OPTASK | 1. M | 1. Both |
|  | 1. If the OPTASK is published, create and use a copy of the OPTASK. Increase the version of the ‘new’ OPTASK and keep ‘old’ OPTASK. |  |  |
|  | 1. Validate the OPTASK with the most recent information (automatic process) |  |  |
| 1. 2 | 1. Correct and/or Modify the OPTASK in line with the new national information. | 1. M | 1. Both |
| 1. 3 | 1. Re-Validate the OPTASK with the most recent information (automatic process) | 1. M | 1. Both |
| 1. 4 | Generate/export the updated OPTASK graphical depiction. | 1. M | 1. Both |
| 1. 5 | Make it possible to reuse the layout modifications of the original OPTASK graphical depiction. | 1. S | 1. Both |

* 1. Publish OPTASK
     1. Brief Description

1. Once the OPTASK design is completed the OPTASK can be published. The published OPTASK is considered the single active OPTASK for the operation, previously active OPTASK’s are deactivated/retracted.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. NMA selects OPTASK to activate. | 1. M | 1. Both |
| 1. 2 | 1. Notify the National Leads that this OPTASK has been activated | 1. E 2. C | 1. Offline 2. Online |

* 1. National Lead registers his system(s) for joining the operation
     1. Description

1. National Lead registers his system(s) for joining the operation by submitting the following information:
   * Nation name, all systems participating for the nation
   * The national POC per system
   * Security classification (check this).
     1. Flow of events

| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| --- | --- | --- | --- |
| 1. 1 | 1. National Lead delivers the information | 1. M 2. C | 1. Offline 2. Online |
| 1. 1a | 1. National Lead delivers the information offline (e.g. usb, email etc) | 1. M | 1. Offline |
| 1. 1b | 1. National Lead exposes the information (e.g. url, WS-Resource) | 1. S | 1. Online |
| 1. 1c | 1. National Lead uploads the information (e.g. web/portal/app) | 1. C | 1. Online |
| 1. 1d | 1. National Lead enters the information (e.g. webform) | 1. C | 1. Online |

* 1. coordinate the national actors/capability participation
     1. Description

1. Coordinate the national actors/capability participation. This is an external activity that is out of scope for the OPTASK Builder systems.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | Coordinate national actors | 1. E | 1. Offline |
| 1. 2 | Send the initial system details to the national SME | 1. E | 1. Offline |

* 1. National Lead collects information, and generates SDF using the SDF Builder
     1. Brief Description

1. The National Lead gathers all relevant information and uses the SDF Builder to create an SDF.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. National Lead fills the SDF Tool with the information received from the NMA (see 3.2) (if not already done) | 1. M | 1. **Offline** |
| 1. 2 | 1. National Lead fills the SDF Tool with the information provided to the NMA (see 3.6) (if not already done) | 1. M | 1. **Offline** |
| 1. 3 | 1. National SME fills in the technical details for his system in the System Description Form. | 1. M | 1. **Offline** |
| 1. 4 | 1. National Operator fills in the operational details for his system in the System Description Form. | 1. M | 1. **Offline** |
| 1. 5 | 1. National exports the SDF resulting from the SDF tool |  |  |

* 1. National Lead collects information, and generates SDF using another tool
     1. Brief Description

1. The National Lead gathers all relevant information and uses an undefined system to create an SDF..
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. National Operator uses an undefined tool to generate an SDF containing all relevant operational and technical information. | 1. (O) | 1. Both |

* 1. National Lead send back national information to NMA
     1. Brief Description

1. Once all information has been collected in the System Description Form, it is send to the NMA.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. National Lead sends back the SDF with the national information to the NMA | 1. M |  |
| 1. 1a | 1. National Lead delivers the SDF offline (e.g. usb, email etc) | 1. M | 1. Offline |
| 1. 1b | 1. National Lead exposes the SDF (e.g. url, WS-Resource) | 1. S | 1. Online |
| 1. 1c | 1. National Lead uploads the SDF (e.g. web/portal/app) | 1. C | 1. Online |
| 1. 1d | 1. National Lead enters the SDF (e.g. webform) | 1. C | 1. Online |
| 1. 2 | 1. NMA Validates the SDF | 1. M |  |
| 1. 2a | 1. provided invalid/incomplete SDF will be refused | 1. M | 1. Online |
| 1. 2b | 1. received invalid/incomplete SDF will be ignored sender will be notified to provide correct version | 1. M | 1. Offline |

* 1. UPDATE of the national participation form
     1. Brief Description

1. When the information in a System Description Form submitted earlier has changed, the National Lead can submit an updated participation form to the NMA.
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. National Lead/National Operator/National SME updates the participation form (systems plus the technical details) (Using the SDF tool or any other undefined tool) | 1. M | 1. Both |
| 1. 2 | 1. National Lead sends the update   Delivery offline: upload   1. Delivery online: publish | 1. M 2. C | 1. Offline 2. Online |
| 1. 2a | 1. National Lead delivers the SDF offline (e.g. usb, email etc) | 1. M | 1. Offline |
| 1. 2b | 1. National Lead exposes the SDF (e.g. url, WS-Resource) | 1. S | 1. Online |
| 1. 2c | 1. National Lead uploads the SDF (e.g. web/portal/app) | 1. C | 1. Online |
| 1. 2d | 1. National Lead enters the SDF (e.g. webform) | 1. C | 1. Online |
| 1. 3 | 1. NMA Validates the SDF | 1. M |  |
| 1. 3a | 1. provided invalid/incomplete SDF will be refused | 1. M | 1. Online |
| 1. 3b | 1. received invalid/incomplete SDF will be ignored sender will be notified to provide correct version | 1. M | 1. Offline |

* 1. Request for OPTASK
     1. Brief Description

1. Request for OPTASK by National Lead and/or National Operator
   * 1. Flow of events

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Event** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | NMA provides the OPTASK |  |  |
| 1. 1a | 1. NMA provides a download url to the OPTASK | 1. S | 1. Online |
| 1. 1b | 1. NMA publishes the OPTASK document (e.g. email, usb, file-share) | 1. M | 1. Offline |

1. Supplementary specification
2. The supplementary specification captures the requirements that are not readily captured in the use cases.
   1. Functionality
      1. Access restrictions on the SDF tool

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Requirement** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 1 | 1. Only 1 user can modify the National SDF at the same time (lock access) | 1. M | 1. Both |
| 1. 2 | 1. Manage access of different classifications of information within 1 message | 1. W | 1. Online |

* 1. Usability
  2. Reliability
  3. Performance
  4. supportability
  5. Design Constraints

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Requirement** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 3 | 1. System architecture needs to cope with multiple message-format versions (loosely coupling between message format and system) | 1. M | 1. Both |
|  | 1. System architecture needs to cope with multiple exchange protocol versions (loosely coupling between message format and system) (e.g. IP1-FFI\_MTF, IP1-NFFI, SIP3, WSMP etc.) | 1. M |  |
|  | 1. System architecture needs to cope with multiple port behaviours (e.g. IP1 maintain-open vs. Open-Send-Close) | 1. M |  |
|  | 1. System architecture needs to cope with multiple dataflow over connections (Send, Receive, Both for IP1 server or Clients) | 1. M |  |

* 1. Online User Documentation and Help System Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Requirement** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 4 | 1. Deployment manual | 1. M | 1. Both |
| 1. 5 | 1. User manual | 1. M | 1. Both |

* 1. Purchased Components
  2. Interfaces

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Requirement** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 6 | 1. Upload possibility for National Lead of Capability Participation Message in OPTASK builder | 1. M | 1. Offline |
| 1. 7 | 1. Download possibility for National Lead of OPTASK in OPTASK builder | 1. C | 1. Online |
| 1. 8 | 1. System to System API (using WSMP) between National SDF Builder and NMA OPTASK Builder | 1. C | 1. Online |

* 1. Licensing Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **No.** | 1. **Requirement** | 1. **Requirement level** | 1. **Online, Offline, Both** |
| 1. 9 | 1. Uses of only open source solutions (no GPL) | 1. S | 1. Both |

* 1. Legal, Copyright, and Other Notices
  2. Applicable Standards

1. Glossary of terms and abbreviations

|  |  |
| --- | --- |
| FFI | Friendly Force Information |
| FFT Consumer | Friendly Force Tracking (FFT) Consumers receive and display FFT Information forwarded from FFT gateways, hubs and/or proxies. FFT Consumers receive the Friendly Force Information in the FFI message format. |
| FFT Gateway | A Friendly Force Tracking (FFT) Gateway collects FFT information from connected FFT Terminals via system-specific message formats and converts it to the FFI standard (NFFI or FFI). Likewise it receives standard FFI messages and forwards them to the connected terminals, if possible using the system specific message. |
| FFT Hub | Friendly Force Tracking (FFT) Hubs receive information from one or more FFT Gateways or FFT Proxies and disseminate them to other connected systems, while avoiding data loops. |
| FFT Proxy | The FFT Proxy can convert from one protocol or standard to another. It has to follow the standards of both related protocols. |
| FFT Terminal | Friendly Force Tracking (FFT) Terminals are also referred to as FFT Transponders in STANAG 5527 (ADatP-36(A)). Individual FFT Terminals report within their individual network to a dedicated system, called the FFT Gateway, which in turn converts the reports into the FFI message format and forwards the information to the FFT network within a dedicated area of operations. The format used between FFT terminals and Gateways is system specific and not under the scope of any interoperability standard. |
| FFT | Friendly Force Tracking |
| FFTS | Friendly Force Tracking Systems |
| FMN | Federated Mission Network |
| IOTA | C2 Interoperability Test and Assessment tools |
| 1. NCI Agency | 1. NATO Communications and Information Agency |
| 1. NFFI | 1. NATO Friendly Force Information |
| 1. NMA | 1. Network Management Authority |
| 1. POC | 1. Point of Contact |
| 1. STANAG | 1. NATO Standardization Agreement |

1. References
2. [NATO STANAG 5527, 2017]  
   NATO Standardization Agreement 5527, “Friendly Force Tracking Systems Interoperability”, NATO Standardization Agency, Brussels, Belgium, 20 March 2017