

## Meeting: 4<sup>th</sup> SSN / LRIT Group Meeting

**Place and date: Lisbon, 23 October 2018**

**Agenda item: Monitoring of Web services**

**Document number: SSN/LRIT 4.4.2**

**Submitted by EMSA**

Summary	The aim of this document is to propose a common approach for monitoring the SSN web services by MS.
Action to be taken	As per paragraph 3.
Related documents	<ul style="list-style-type: none"> <li>a) EMSA document SSN LRIT 2.4.6 on monitoring Web Services</li> <li>b) XML Messaging Reference Guide, Section 3.3 (v4.01)</li> <li>c) SSN Web Services (v1.40)</li> </ul>

## 1 Background

The majority of MSs systems perform data buffering of messages during SSN downtimes (e.g. in case of communication failures between the MS system and the central SSN or when the central SSN is down), in accordance with the IFCD SSN performance requirements (section 4.4) and retransmit the data when the communication is resumed.

Before any intervention on central SSN, EMSA sends an email to all MSs informing them when central SSN will be unavailable. To detect the SSN downtimes in the event of a failure or a scheduled interruption, some MS use ad-hoc approaches for monitoring SSN availability. The aim of this document is to propose a common approach that allows MSs to automatically detect when the central SSN is not able to receive notifications from the MSs (by monitoring the availability of the central SSN web services).

At the 2<sup>nd</sup> SSN / LRIT Group meeting, EMSA presented a proposal for harmonizing monitoring by MS. In addition, Belgium proposed to extend the monitoring to cover also the response messages (monitor if the central SSN can respond to MSs requests).

As a follow up to the 2<sup>nd</sup> SSN/LRIT meeting, several MS confirmed to EMSA that they perform monitoring in line with the EMSA proposal (reference document SSN LRIT 2.4.6 – referred as “1<sup>st</sup> level” monitoring). Furthermore, Belgium suggested a more advanced approach (already implemented at national system level) to monitor central SSN system’s availability by performing a ship AIS request. This mechanism allows Belgium to monitor not only the availability of central SSN to accept a request but also to provide the asynchronous response back to the national system (referred as “2<sup>nd</sup> level” monitoring).

## 2 Monitoring mechanisms

EMSA analysed the proposal of Belgium and suggests two monitoring levels of the central SSN web services as follows:

- a. **1<sup>st</sup> level** monitoring: to minimize the impact on central SSN by reducing the logging of monitoring messages by not requiring the identification of the calling system. This check shall not be more frequent than **every 5 minutes**;
- b. **2<sup>nd</sup> level** monitoring: monitoring central SSN system's availability and two-way communication by sending a ship AIS request (for a test vessel) and waiting for the response from SSN central system. This check shall not be more frequent than **every 30 minutes**.

The above monitoring mechanism should be applied on a voluntary basis (either 1<sup>st</sup> level or 2<sup>nd</sup> level or both) and should be aligned with the messaging interface types (XML or SOAP) used for sending notifications and/or requests. Depending on the type and version of the interface, the monitoring should be performed as described in the Annex.

Regardless of the monitoring mechanism applied, data buffering and retransmission shall continue to be performed by MS national systems in the event of a failure or a scheduled interruption (detected by lack of Receipt (time out) or Receipt message with ServerError status code sent by central SSN).

## 3 Actions required

MS are invited to provide their comments on the above proposal.

## ANNEX

### 1<sup>st</sup> level monitoring

#### SSN SOAP interface

- Call WSDL URL (using HTTP GET)
  - v4: <https://safeseanet-eis.emsa.europa.eu:448/ssn-xmlprotocol-ws/ssnmessageservice/message.wsdl>
- Normal response
  - WSDL content
  - Check HTTP 200 or 202
  - No need to check content

#### SSN XML interface

- Send an empty message (using HTTP POST, no content)
  - v4: <https://safeseanet-eis.emsa.europa.eu:448/ssn-xmlprotocol-web/ssn.do>
- Normal response
  - Receipt message with status code InvalidFormat and status message  
*Empty message received.*
  - Check HTTP 200 or 202
  - No need to check content

### 2<sup>nd</sup> level monitoring

#### SSN SOAP interface

- Call web service endpoint URL (using HTTP POST):
  - v4: <https://safeseanet-eis.emsa.europa.eu:448/ssn-xmlprotocol-ws/ssnmessageservice>
  - using content similar as for XML interface (inside the SOAP envelope)
- Normal behavior
  - Successful HTTP response code (200 or 202)
  - Check that Receipt message (HTTP body) has status code OK
- Wait for asynchronous response
  - Check that response message status code is either NotFound or OK
  - Send back successful HTTP response code

#### SSN XML interface

- Call web service endpoint URL (using HTTP POST):
  - v4: <https://safeseanet-eis.emsa.europa.eu:448/ssn-xmlprotocol-web/ssn.do>
  - using content (for test vessel with IMO=9999999) similar to:

```
<MS2SSN_Ship_Req xmlns="urn:eu.emsa.ssn" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Header Version="4.0" SentAt="2018-09-11T16:26:02Z" From="xxnca1" To="SafeSeaNet"
  MSRefId="20180911_03" TimeoutValue="90"/>
  <Body>
    <SearchCriteria IMONumber="9999999" ShipNotType="AIS"/>
  </Body>
</MS2SSN_Ship_Req>
```

- Normal behavior
  - Successful HTTP response code (200 or 202)
  - Check that Receipt message (HTTP body) has status code OK

```
<SSN_Receipt xmlns="urn:eu.emsa.ssn">
  <Header Version="4.0" SentAt="2018-09-11T16:38:03Z" From="SafeSeaNet" To="xxnca1" MSRefId="20180911_03"
  SSNRefId="1814359676" StatusCode="OK" StatusMessage="The message processed successfully."/>
</SSN_Receipt>
```

- Wait for asynchronous response
  - Check that response message status code is either NotFound or OK

```
<SSN2MS_Ship_Res xmlns="urn:eu.emsa.ssn">
  <Header Version="4.0" SentAt="2018-09-11T16:38:03Z" From="SafeSeaNet" To="xxnca1" MSRefId="20180911_03"
  SSNRefId="1814359678" StatusCode="NotFound" StatusMessage="The notification details requested in the
  corresponding XML request message does not exist"/>
  <Body>
    <SearchCriteria IMONumber="9999999" ShipNotType="AIS"/>
  </Body>
</SSN2MS_Ship_Res>
```

- Send back successful HTTP response code

The URLs presented below are the ones of SSN production. For SSN training the URLs start with <https://eis-training.emsa.europa.eu>