Enhanced Group Call – Application Programming Interface Correspondence Group (EGC-API CG)

EGC-API CG guidance documentation

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Introduction

The International Hydrographic Organization (IHO) World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC) has formed an EGC-API Correspondence Group (EGC-API CG) to develop an application programming interface (API) standard to support the machine-to-machine transfer of Enhanced Group Call (EGC) shore-to-ship information between certified and registered Maritime Safety Information Providers (MSIP) and Recognized Mobile Satellite Service (RMSS) providers.

Abbreviations/Glossary

API	application programming interface
ASCII	International Alphabet No.5 (IA5) is character encoding defined in ITU-T Recommendation T.50[1]
EGC	enhanced group call
HTTPS	hypertext transfer protocol secure
JSON	JavaScript object notation
MSI	maritime safety information
MSIP	maritime safety information provider
REST	representational state transfer
RMSS	recognized mobile satellite service
SAR	search and rescue

Procedure

In support of paragraph **3.g.** of the EGC-API CG Terms of Reference, the EGC-API CG will:

> *develop appropriate documentation and guidance for [maritime safety information providers] and the [recognized mobile-satellite service] providers to facilitate the development and implementation of the standard.*

This document contains guidance for MSIP and RMSS providers to facilitate development and implementation of the standard, as agreed by the EGC-API CG.

Background

The eleventh meeting of the WWNWS-SC held in August 2019 agreed to

> *"… establish a correspondence group (CG) to explore the feasibility, creation and implementation of an API in order to allow NAVAREA and METAREA Coordinators to use only one interface for the broadcast and monitoring of their warnings."*

The IHO EGC-API CG has developed a machine-to-machine standard to support the transfer of EGC shore-to-ship information, including its required messaging instructions, between certified and registered EGC providers (MSIP) and RMSS providers.

[1] Also referred to as the International Reference Alphabet (IRA) or ASCII extended

Scope of work

The scope of work is limited to shore-to-ship information exchange for navigational warnings, meteorological warnings and forecast, in accordance with the guidance and guidelines of the IMO, World Meteorological Organization (WMO) and IHO.

The standard is not applicable to ship-to-shore distress alerting and shore-to-ship search and rescue (SAR) related information, nor does it meet broadcast monitoring requirements.

Benefits

The API standard is intended to benefit NAVAREA and METAREA Coordinators, or MSIP, who intend to integrate the transfer of machine-to-machine shore-to-ship EGC information into an information management system (or similar).

This means a single user interface could be developed by MSIP to enable their operators/personnel to draft a single message for broadcast that can then be sent (machine-to-machine) to each RMSS provider (as appropriate) for transmission.

To ensure the API standard follows international guidance and guidelines, the standard uses C code addressing and 'ascii' format bulletins.

Limitations

The API standard is not mandated for implementation by RMSS providers (or MSIP). If implemented by an RMSS provider, the essential requirements apply (derived from International regulation); however, the desirable requirements are encouraged.

The API standard does not include, amongst other matters, broadcast monitoring (refer to IMO resolutions A.706(17), as amended and A.1051(27), as amended, and IMO COMSAR/Circ.37), user interface, error checking or training for MSIP.

Essential requirements

Essential requirements are those that must be included in the final product specification of the API developed by the RMSS provider(s). The protocols and messaging instructions must follow the guidelines and guidance of the International Maritime Organization (IMO), World Meteorological Organization (WMO) and International Hydrographic Organization (IHO).

The EGC-API CG reviewed the needs and requirements for an API standard, subsequently agreeing to four essential requirements:

Requirement No 1: The standard must expose a RESTful API accepting JSON arguments.

Requirement No 2: The standard must comply with relevant guidelines and guidance developed by IMO, WMO and IHO.

Requirement No 3: The standard must authenticate clients in the form of HTTPS requests.

Requirement No 4: Implementation and related documentation of the standard must be made available by the RMSS provider.

Desirable requirements

Desirable requirements may be included in the final product specification of the API developed by the RMSS provider(s). These may be specified by EGC providers or the RMSS providers themselves. A desirable must not impede on the essentials of the API.

The EGC-API CG reviewed the needs and requirements for an API standard, subsequently agreeing to eight desirable requirements:

Requirement No 1: The API should allow for the creation of one or more messages in an authenticated session.

Requirement No 2: The API should return a timestamp in an ISO 8601 format, generated by the RMSS system.

Requirement No 3: The API should allow an MSIP to provide a self-generated unique identification (SGID) for reference to a new message.

Requirement No 4: The API should return a unique identification (ID) generated by the RMSS system when a new and valid message is submitted by the MSIP.

Requirement No 5: The API should return an error code when the RMSS system identifies an error in a new message submitted by the MSIP.

Requirement No 6: The API should return the status of a message, generated by the RMSS system, when the MSIP requests it by supplying the ID.

Requirement No 7: The API should return the status and ID of all in-force messages, generated by the RMSS system, when the MSIP requests it.

Requirement No 8: The API should allow a message to be cancelled (removed from the automatic broadcast schedule) when the MSIP requests it by supplying the ID.

Compliance requirements

The API standard has been prepared considering international guidelines and guidance developed by IMO, WMO and IHO, including the Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSC.1/Circ.1364/Rev.1/Corr.1).

Implementation

The standard requires that RMSS providers make available implementation and related documentation that is enough to enable MSIP to implement the standard.

To assist MSIP, the EGC-API CG has developed a test program intended to exercise the critical components of the API standard to ensure it is prepared for operational implementation.

Further information

Further guidance is available from the Chair of WWNWS-SC.