Annex A - Digital Technologies  
Draft Initial Review Process

# Introduction

The development of digital technologies continues to be rapid and it impacts on almost all aspects of the maritime industry, including maritime communications, aids to navigation and VTS. Digital technologies deal with the creation and practical use of digital or computerised information using devices, methods or systems. (Source http://www.dictionary.com)

Therefore, it is important to evaluate emerging digital technologies in consideration of user requirements and needs of IALA membership. The evaluation will be a preliminary, high level, desktop study. It will identify the key features and capabilities advantages/disadvantages, limitations and application to aids to navigation, VTS and services and systems within the context of e-navigation.

For this purpose, a simplified set of assessment criteria has been established to provide a consistent review approach. However, it is recognised that innovation and new technologies cannot always be easily measured by extant processes. Accordingly, the review process is to be considered an initial step in determining further steps that may be taken to confirm that a technology is appropriate and feasible for the use of IALA members. When providing information on a new technology the organisation which provides the information also shall identify how the technology may be used by IALA members[[1]](#footnote-1).

The ENAV Committee has developed a staged process to conduct an initial assessment of new candidate technologies. The expectation is that, when a candidate technology receives a successful recommendation, the information will be shared with other working groups and/or committees within IALA. Where a candidate technology fails to receive a positive outcome, the details will be retained for future reference.

# Staged Approach

The assessment process will be carried out in three stages:

## Stage 1 : Proposed Technology

The proposers of a new candidate Technology are requested to answer questions in ‘Technology Candidate Response’ column within the following table. The proposal, along with any supporting input paper and presentation on the technology, will be provided as input to the ENAV Committee.

## Stage 2 : ENAV Work group review

The ENAV Committee will evaluate the ‘Candidate Response’ and comment within the ‘Working Group Response’ column.

Where appropriate the working group will invite new candidate providers and/or relevant parties, to present and demonstrate on their subject matter.

A ‘status’ will be applied by the working group for each line of information within the table.

## Stage 3 : Recommendation

Once the table has been completed, the working group will review the findings and provide a recommendation.

# Tracking Technology Reviews

A technology tracker table has also been developed to provide a high-level overview of the status of the review of technologies.

Digital Technologies – Initial Review Table

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Question** | **Technology Candidate Response** | | **Working Group Response** | |  |  |  | | --- | --- | --- | | **Green** | **Amber** | **Red** | |
| **Infrastructure** | **User** |  | **Status** |
|  | Where has the referral come from? |  |  |  |  |
|  | Name of technology and product name |  |  |  |  |
|  | Functional description |  |  |  |  |
|  | Proposed user group |  |  |  |  |
|  | What are its Key limitations |  |  |  |  |
|  | Where is it currently used (geographic and/or industry)? |  |  |  |  |
|  | How is it currently used? |  |  |  |  |
|  | How could it be used within the maritime sector? |  |  |  |  |
|  | Who developed it? |  |  |  |  |
|  | Is it commercial, non-commercial or military? |  |  |  |  |
|  | Is there an existing technology that meets the same requirements?  If so, what make this different? |  |  |  |  |
|  | Ease of implementation? |  |  |  |  |
|  | What are the constraints for implementation? |  |  |  |  |
|  | what is the capability of the technology? |  |  |  |  |
|  | What is the scalability of the technology? |  |  |  |  |
|  | Is the technology backward compatible? |  |  |  |  |
|  | Is the technology dependant on another technology? |  |  |  |  |
|  | Can the technology be demonstrated? |  |  |  |  |
| 17 | Are there any results and test bed? Please List |  |  |  |  |
| 18 | Is there a compliance summary? |  |  |  |  |
| 19 | Are there legal issues associated with the implementation of the technology? |  |  |  |  |
| 20 | Are there any intellectual property rights (essential patents) associated with the technology? |  |  |  |  |
| 21 | Is the technology safe to use |  |  |  |  |
| 22 | Does the use of the technology require extra training? |  |  |  |  |
| 23 | Are there environmental considerations with the technology? |  |  |  |  |
| 24 | What are the financial considerations for implementation and use? |  |  |  |  |
| 25 | Is the technology secure (i.e. protected against hacking; privacy of data)? |  |  |  |  |
| 27 | Readiness (EU Technology Readiness level - TRL) (level of maturity of technology) |  |  |  |  |
| 28 | Can you provide independent References |  |  |  |  |

New Candidate Technology Tracker (example only)

|  | **Candidate Technology** |  | **ENAV Start Session** | **ENAV**  **Planned End Session** | **Revised End Session** | **Progress Indicator** | | | **Status Overview** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question** |  | **Green** | **Amber** | **Red** |
|  | **WG3 Emerging Technologies** |  |  |  |  |  |  |  |  |
| 1 | 3GPP – 5G |  | 22 | 24 |  |  |  |  |  |
| 2 | 3GPP – LTE (version ?) |  | 23 | 24 |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |
| ~~9~~ |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |

1. Indicate the user needs that may be met by the proposed technology or indicates a reference where these user needs are documented. [↑](#footnote-ref-1)