

IALA COUNCIL 62nd session



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8 – STRATEGY AND POLICY

8.4 – Technical documents

8.4.5 – IALA Technical Policy

Note by the Secretariat

1. NEED FOR A CLEAR TECHNICAL POLICY

If an IALA member, or the representative of a sister organisation asked what IALA's view or policy is on GNSS back-up systems, he or she might not receive a clear reply, or might hear a different reply, depending on who was asked. The same would apply to IALA's policy on Vessel Traffic Management or cyber security in e-navigation. Other examples can be imagined.

We already have IALA policies on financial matters, employment, travel, Committee organisation, meetings, and other matters. But we are lacking a policy document which contains statements of policy on the many technical matters facing us.

Depending on the technical area, a specific policy statement might have a firm and clear indication of direction or it might state a general view. Policy should make clear the areas where IALA will be active and those areas where it will not venture.

The Secretariat proposes that as IALA moves towards an IGO, we should produce a Technical Policy document, comprising a series of policy statements to inform members and Committee participants, sister organisations, and the public, of IALA technical policy.

2. BACKGROUND

The Strategic Vision includes Goals and Strategies towards 2024 and Priorities for the work period 2014-2018. Work programmes for the Committees have been approved by Council.

The creation of a technical policy statement for IALA has been the subject of a series of email exchanges and some discussions between the Deputy Secretary-General and the Committee Chairs since late 2015. It was then discussed in detail at PAP31 in April 2016.

3. PURPOSE

The purpose of a Technical Policy document is to provide a clear and logical link between the Strategic Vision and the Committee work programmes, explaining in some detail what and where the Committees will do in order to execute the Strategies of the Strategic Vision and the 2014-2018 Priorities.

A Technical Policy would be an authoritative guide that informs readers concisely about the various complex issues facing IALA, and presents the IALA's view on these matters.

It would:

- Carry a policy statement on each important technical issue
- Provide a short, clear, and logical explanation of how the (high level) Strategic Vision is implemented in the (working level) Work Programmes of the four Committees



- Help ensure that Secretariat and Committee Chairs and Vice-Chairs have a complete and unified understanding of IALA's position on technical matters
- Ensure that our Committee work remains well-focused
- Provide advice to members and to sister organisations on the direction of IALA's technical work, including areas in which IALA will not be engaged

4. SOME EXAMPLES OF STATEMENTS TO BE INCLUDED

GNSS back-up policy was mentioned as an example as an area where IALA should make a statement of policy. The following might be the basis for a policy statement.

- Expectation that no single maritime GNSS backup is likely, and that a global mix of systems is expected
- Focus on R-mode, eLoran-eChayka, and signals of opportunity
 - Expectation of (new) ship receivers/systems being software defined radio systems able to process and use whatever signal mix is available
- Recommend retention of existing DGPS stations with a view to future conversion to R-Mode
- Strong support for FERNS
 - And a desire for FERNS to coordinate other RPNT matters in its region, such as coordination of R-Mode stations

Annex A is a draft policy statement based on the above bullet points.

The following are further examples of the areas in which statements of policy are desirable.

- Vessel Traffic Management
- Cyber security in e-navigation and VTS
- Dissemination of MSI by radio broadcast
- AtoN, PNT, and MSI for Arctic navigation
- IALANET, risk management, maritime spatial planning
- Autonomous vessels in waterways and in VTS areas
- The future for visual AtoN
- The international and regional obligations for provision of AtoN and VTS including advice on national legislation and regulations
- Heritage structures

5. DOCUMENT STRUCTURE

The Secretariat envisages that the document would be structured under the topic headings of the blue and white boxes of the Standards-Recommendations scheme.

Each policy statement would have a structure equal or similar to the following.

- Technical area, e.g. terrestrial GNSS backup
- Present situation, e.g. legal, history, technical (if necessary)
- Strategic Vision, Relevant strategies and/or priorities (as necessary)



- Policy statement, concise but complete (See Annex A for an example)

The Technical Policy document should:

- Be concise
- Be easy for a non-specialist to comprehend
- Not be a work programme

6. DELIVERY OF THE TECHNICAL POLICY

The Technical Policy would be

- Prepared by the Secretariat and the PAP
- Submitted to Council for consideration
- A public document available for download from the website
- A living document, reviewed annually

7. ACTION REQUESTED

The Council is requested to

1. Note that the Secretariat and PAP is proceeding with this work, and
2. Provide advice as it sees desirable.



8. ANNEX A – EXAMPLE OF A POLICY STATEMENT

1. RADIO-NAVIGATION SERVICES

1.1 Content

Technical areas encompass the following.

- Satellite positioning and timing
- Terrestrial positioning and timing (including eLoran, eChayka, R-mode, Racon & radar)
- RACON & Radar positioning
- Augmentation services (DGNSS)

1.2 Policy

1.2.1 Positioning Services

IALA sees resilient positioning as desirable for safe and efficient navigation. At present the GNSS systems GPS and GLONASS provide global coverage. Galileo and BeiDou GNSS systems are under development and will provide extra resilience when operational.

IALA is not directly concerned with the provision of Global Navigational Satellite Services (GNSS) or with the provision of augmentation services via satellite, but encourages the provision of these services.

All four GNSS mentioned above use the same frequency band for positioning signal broadcast, and all can be vulnerable to jamming and spoofing by a local terrestrial signal. Increased positioning resilience for navigators can be achieved by the provision of terrestrial radio-positioning services.

1.2.2 Terrestrial radio-navigation services for GNSS resilience – R-Mode conversion of existing DGNSS radio beacons

Noting the large number of DGNSS Medium Frequency Radio Beacons in service worldwide, IALA views the conversion of these to R-Mode operation as having high potential for providing global network of harmonised terrestrial back-up positioning for GNSS for maritime use. Positioning accuracy would depend on beacon locations, geometry, and other factors.

IALA recommends that its members should retain existing DGNSS Medium Frequency Radio Beacons, and should convert them to R-Mode when IALA has developed technical Recommendations for R-Mode. If existing DGNSS Medium Frequency Radio Beacon broadcasts are to be discontinued, then the sites and antennas should be retained in anticipation of conversion to R-Mode operation.

IALA will publish a Recommendation for R-Mode operation of Medium Frequency Radio Beacons when the technical requirements are finalised, planned for 2017.

Conversion of existing DGNSS stations to R-Mode should include provision for adding the broadcast of Maritime Service Portfolio (MSP) information in NAVDAT format.

1.2.3 Terrestrial radio-navigation services for GNSS resilience – Loran, Chayka, eLoran, eChayka



Loran and Chayka cannot provide the position fixing accuracy that would provide satisfactory GNSS resilience, and IALA views conversion of existing Loran and Chayka chains to eLoran-eChayka as desirable, or alternatively their replacement by a more accurate system.

1.2.4 Terrestrial radio-navigation services for GNSS resilience – FERNS Council

IALA will strongly support the work of the Far East Radionavigation Service (FERNS) to provide Loran-C and Chayka services and other future radio-navigation services. Future services provided by the FERNS Parties may include eLoran and/or R-Mode if the FERNS Parties so decide. IALA will cooperate with the FERNS Council for the creation of eLoran Recommendations.

The FERNS Council could be a future vehicle for regional coordination of Maritime Service Portfolios.

1.2.5 Timing services

IALA does not consider that the provision of terrestrial broadcast timing services is within its scope, except as may be inherent in terrestrial positioning services.