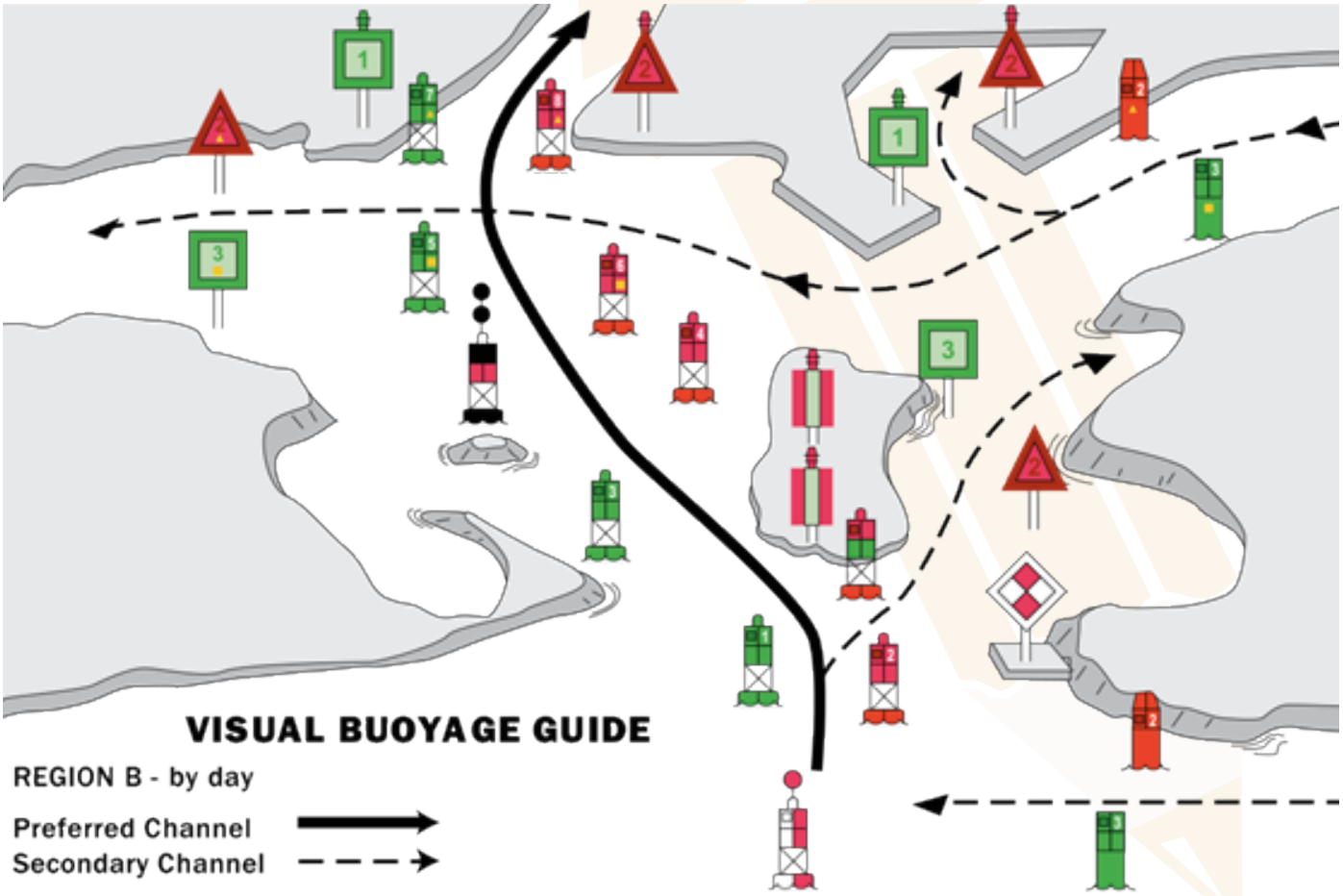
IALA GUIDELINE G1078

IALA Guideline G01078 gives guidance on the use of AtoN in the design of fairways, including review of existing AtoN and design of new systems.

The objective of this design process is to establish an Aids to Navigation deployment that allows safe and efficient navigation, while implying lower cost as possible to AtoN managers.

This guide should be used in conjunction with the rest of the relevant documents, mainly:

- **IALA NAVGUIDE Edition 8 - 2018**
- **IALA Maritime Buoyage System Ed. 8 of 2018**



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Maritime navigation includes the following concepts:

- **Plan the safe passage of a boat, based on nautical charts and relevant information, along an established route.**
- **Monitor the position of the vessel along said route accurately and safely.**
- **Control the boat, its heading, speed, and other parameters, as it follows the planned route safely and efficiently.**

The navigation is normally performed by the vessels navigator, combining the information available in various ways while simultaneously controlling the vessel. In some vessels during certain periods the navigation is completely automated, but with current technology this automation is never complete. Normally, electronic radionavigation systems predominate in oceanic navigation, where such great precision is not necessary. However, in coastal areas and approach navigation or in ports, visual and radar navigation aids are still necessary.

USER REQUIREMENTS

In accordance with current regulations (SOLAS), each of the local AtoN authorities is responsible for providing the practical and necessary navigation aids, as the level of traffic and risk demands.

ACCURACY

The precision requirements established by regulations are:

- Requirement for radionavigation systems (IHO Resolution): 10 m.

- Requirement for aids to navigation (IHO Resolution):

  Fixed aids: 2 m (5m with drafts superior than 100m)

  Floating aids: 10 m (20m with drafts superior than 100m).

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NOTE: *The precision of navigation depends on both the absolute precision of the ship and the precision of the AtoN. The mariner must be able to determine exactly the distance from the ship to certain points, lines or entities.*

RELIABILITY

Reliability is determined considering the following factors:

INTEGRITY: It is the ability to provide the user with a warning in a suitable time interval that the system is not available to be used for navigation.

AVAILABILITY: The percentage of time that an aid, or aid system, is performing its function under the established conditions.

MTBD: Mean time between detection.

MTTF: Mean time to failures.

MTTR: Mean time to repair.

Managers of aids to navigation must refer to IALA Recommendation O □ 130 ‘on Categorization and Availability Objectives for Short Range AtoN’ to establish the categorization of aids to navigation and the calculation of availability objectives.