# The General Lighthouse Authorities' Radio Navigation Plan

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# Contents

- The General Lighthouse Authorities

- The Changing Service Provision Environment
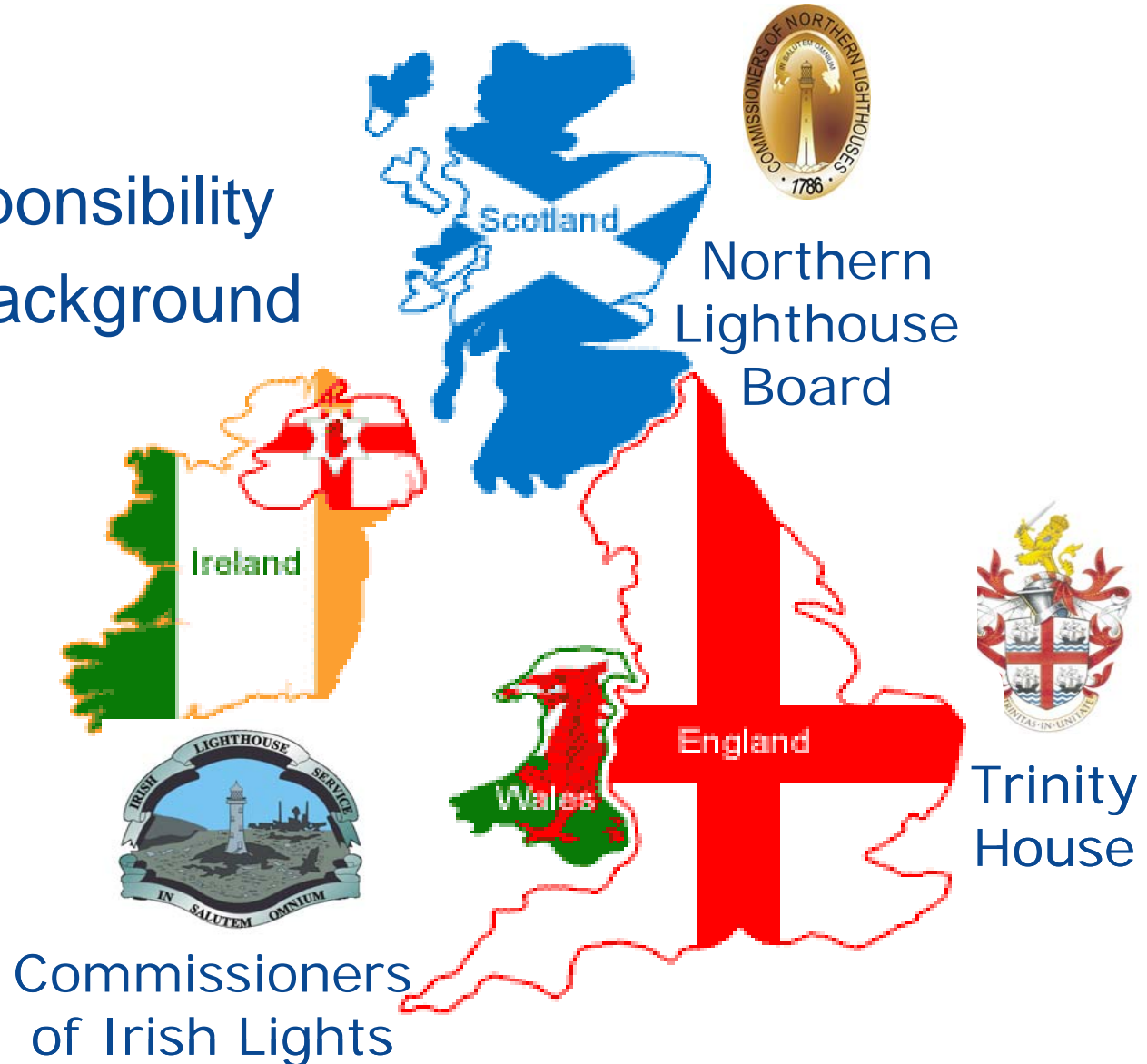
- e-Navigation

- The Way Ahead

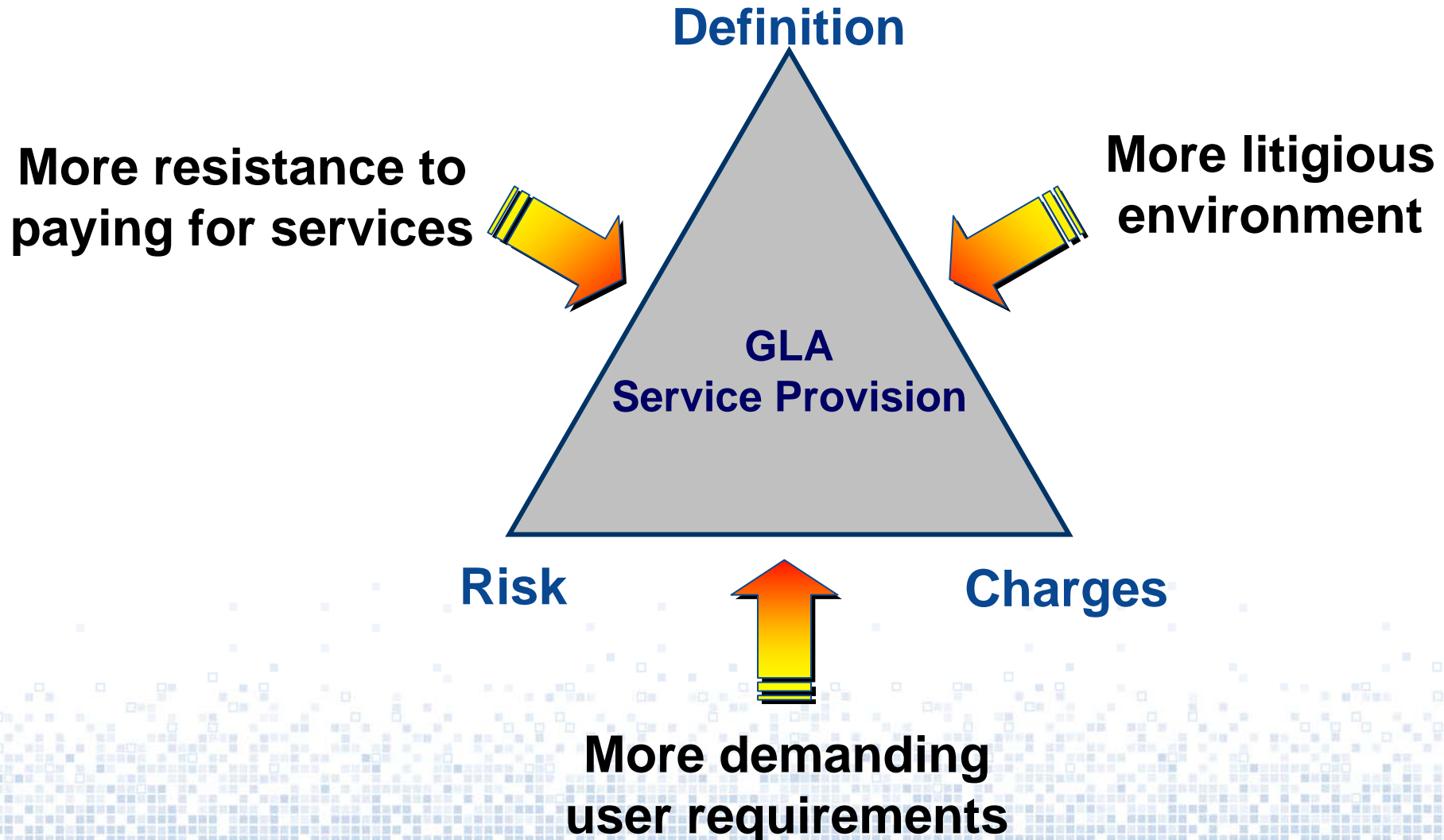# The General Lighthouse Authorities

# The General Lighthouse Authorities

- Mission
- Statutory Responsibility
- Commercial background

Scotland

Northern Lighthouse Board

Ireland

England

Wales

Trinity House

Commissioners of Irish Lights

# The Changing Service Provision Environment

# The GLAs' service provision is coming under increasing pressure

**Definition**

**More resistance to paying for services**

**More litigious environment**

**GLA
Service Provision**

**Risk**

**Charges**

**More demanding
user requirements**

# The changing service provision environment

- Larger & faster vessels

- Congestion at pinch-points

- Trend to one/two man bridges

- Ubiquity of GPS and waypoint navigation

- Concern over ability to revert from electronic to traditional techniques

- In some cases safety may worsen

# e-Navigation

# e-Navigation – definition

- e-Navigation is the <mark>harmonised</mark> collection, integration, <mark>exchange and presentation</mark> of maritime information onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment

# Benefits

| | Stakeholder | |
|---|---|---|
| | **Government** | **Shipowner** |
| **Safety** | Reductions in loss of life and injury caused by grounding | Improved information clarity on the bridge leading to better decision making |
| **Security** | Enhanced shore-based surveillance based on AIS together with radar | Enhanced on-board situational awareness |
| **Environment** | Reduced risk of pollution caused by grounding or collisions | Improved passage planning optimising voyage efficiency |

# A 20-year change process

- Radionavigation systems are becoming much more predominant in the service mix of Aids to Navigation that we provide

- Strong business case
  - Advance the benefits and defer the costs

- Complexity vs flexibility
  - Highly-regulated - mass market

- Defined programme to build confidence
  - managing introduction of new services
  - managing investment by all parties

# The GLA Radionavigation Plan

# Taking ownership
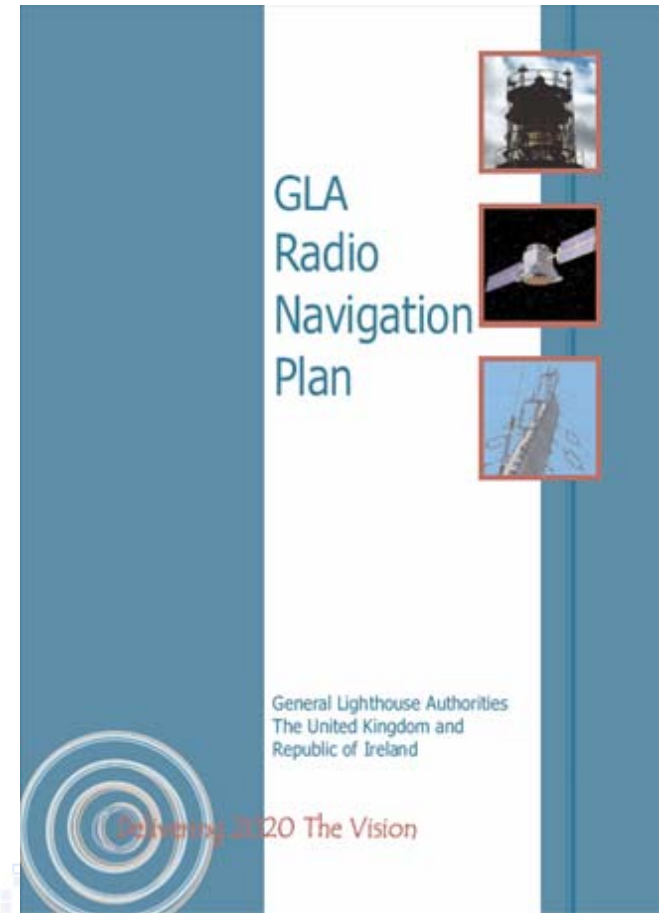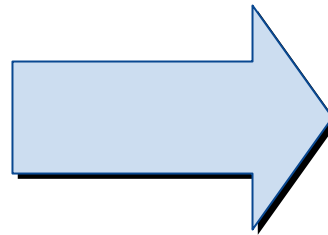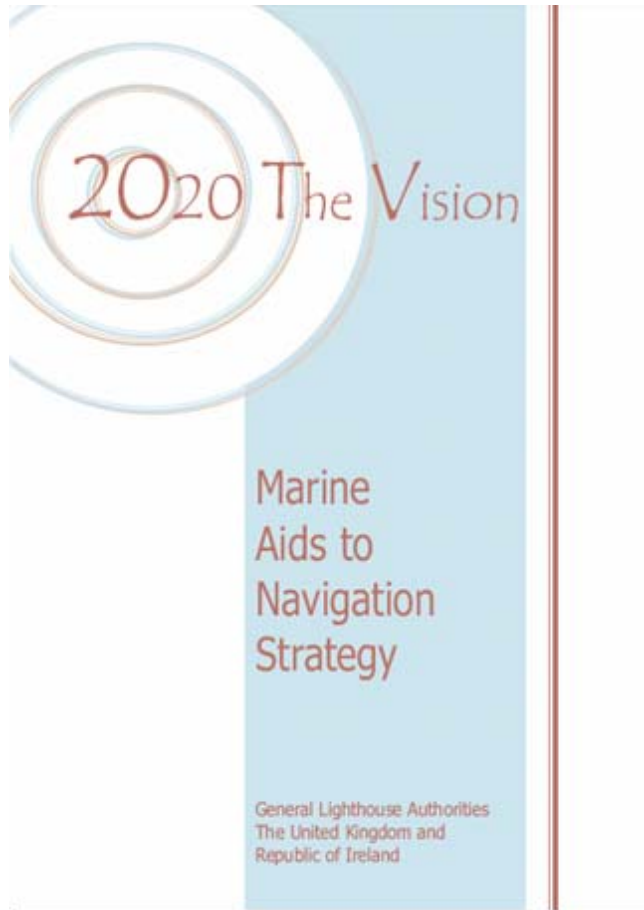


Our GRNP will be launched at TimeNav07 in Geneva

# Process

- Workshop, 7-9 February 2006
  - Invited speakers
  - Requirements capture
  - Roadmapping extreme scenarios
  - Determine and "optimised" scenario
  - Produce an optimised plan
  - SWOT analysis for critical steps
  - Propose Actions

- Production of draft plan with two review points
  - RNAV Cttee meetings in May and August

- Delivery of draft plan to Chief Execs in October 2006

# GRNP Structure

- Introduction

- The changing service provision environment
  - institutional, regulatory, commercial, operational, technical and user

- The GLAs' radionavigation plan
  - GPS, Galileo, DGNSS, AIS, eLoran & Racons

- Delivering the plan
  - Implementation and planning for change

- Our commitment to the user

# Key characteristics

- Adapting in the face of a rapidly changing environment

- Optimising our service provision to provide flexibility

- Allowing us to meet the needs of different users

- Collaborating extensively

- A physical aids to navigation backbone will always be required as part of a balanced approach to the aids to navigation service mix

# GPS and Galileo – stand-alone services beyond the GLAs' control

RESEARCH & RADIONAVIGATION
GENERAL LIGHTHOUSE AUTHORITIES
United Kingdom and Ireland

- GPS
  - Encourage the EU to work with US GPS authorities to ensure continued availability
  - Continue to assess new GPS services to ensure they meet the needs of the mariner
  - Encourage and support IMOs acceptance of new GPS services into the WWRNS

- Galileo
  - Assess new GPS services to ensure they meet the needs of the mariner
  - Encourage and support IMOs acceptance of the Galileo Open Service (and others appropriate) into the WWRNS
  - Continue GLA involvement in the development of GPS/Galileo standards through IMO, IEC and ITU

EU – European Union; IEC – International Electrotechnical Commission; ITU – International Telecommunications Union;WWRNS – World Wide Radionavigation System;

# AIS & Racons – services under our control

- **AIS**
  - Encourage through IMO the establishment of AIS as an approved AtoN
  - Investigate the provision of virtual AtoNs and, in doing so, reiew the local and general provision of physical AtoNs
  - Continue GLA involvement in the development of relevant standards through IALA, IEC, ITU
  - Acquire and process AIS traffic data to develop an improved picture of ship movements

- **Racons**
  - Continue to monitor developments in radar technology and support specific studies or trials as required
  - Investigate and determine the implications of IMO removing the need for backwards compatibility to S-band racons
  - Continue to liaise with appropriate national and international bodies and Racon manufacturers and required, to ensure that the mariners' requirements are met

# eLoran – research activity aiming to mitigate GNSS vulnerability

- eLoran
  - Work with our international partners to ensure that eLoran remains operational within Europe and the US in the short term
  - Work to identify appropriate long-term institutional arrangements for eLoran in Europe
  - Be involved in the development of eLoran standards
  - Work to secure long-term funding for eLoran services
  - Extend the Loran trials at Rugby to March 2010

- eLoran
  - Encourage the development of user equipment
  - Continue our ongoing programme of work and publish the results
  - Encourage and support the realisation of the ERNP through an EC communication and the implementation of recommendations pertaining to Loran
  - Continue to seek wider support from other user segments and public sector domains to share future costs on an equitable basis

# The Way Ahead

# Illustrative e-Navigation

| | |
|---|---|
| 2008 | Recapitalise GLA DGPS system & deploy AIS as an AtoN |
| 2011 | First fully-operational GLA eLoran services |
| 2012 | Introduce modernised GPS, Galileo and GLONASS |
| 2013 | First fully-operational Virtual AtoNs service |
| 2014 | New GLA e-Navigation control centres |
| 2015 | e-Navigation v1.0 |
| 2025 | e-Navigation v2.0 |