

RESEARCH &
RADIONAVIGATION
GENERAL LIGHTHOUSE AUTHORITIES
United Kingdom and Ireland

A New UK Loran Transmitter: Procurement, Installation and Service Provision

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ILA-36: 2007 Convention and Technical Symposium
Embassy Suites Hotel,
Orlando,
Florida,
October 14-17, 2007



UK's Interest in Loran

- UK has always been interested in Loran
 - Observer status in NELS
 - GLA board members of the ILA
- A backup to GNSS
 - 2020 – The Vision (GLA strategy)
 - GLA Radio Navigation Plan

GLA Radio Navigation Plan



General Lighthouse Authorities
The United Kingdom and
Republic of Ireland

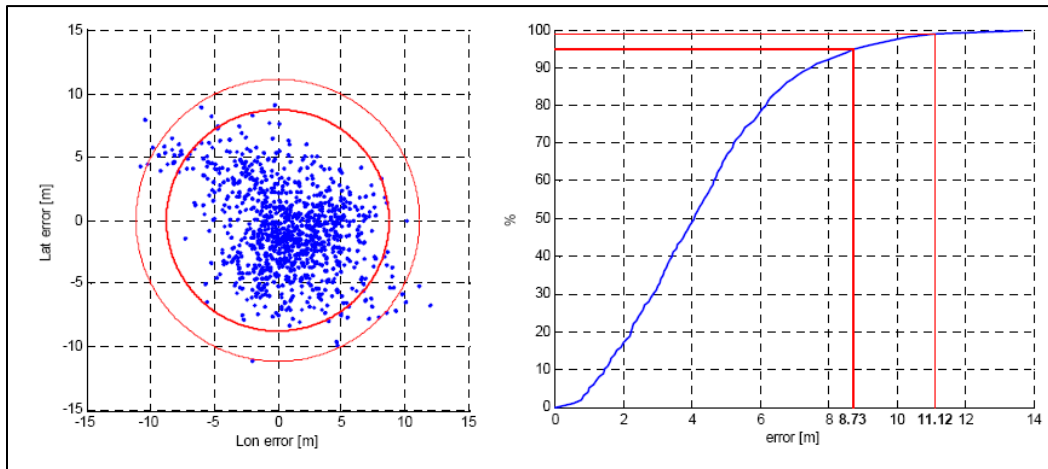
Delivering 2020 The Vision

Rugby

- Rugby Radio Station
 - Central England
 - No sea path
- Recent successes
 - Proof of concept trials (maritime & timing)
 - The Case for eLoran
 - Preliminary business case
- July 2005 – July 2007



Positioning and Timing Performance



Resulting dLoran HEA positioning error with respect to DGPS:

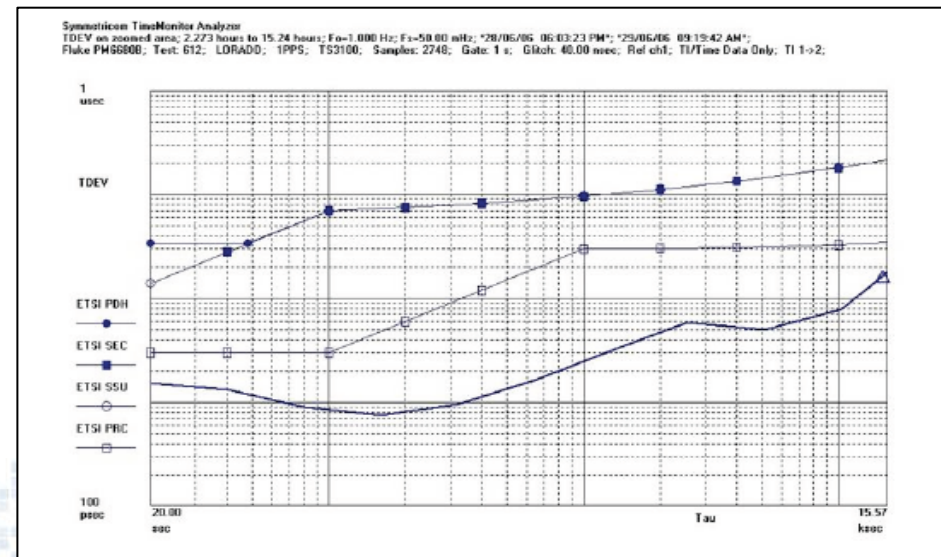
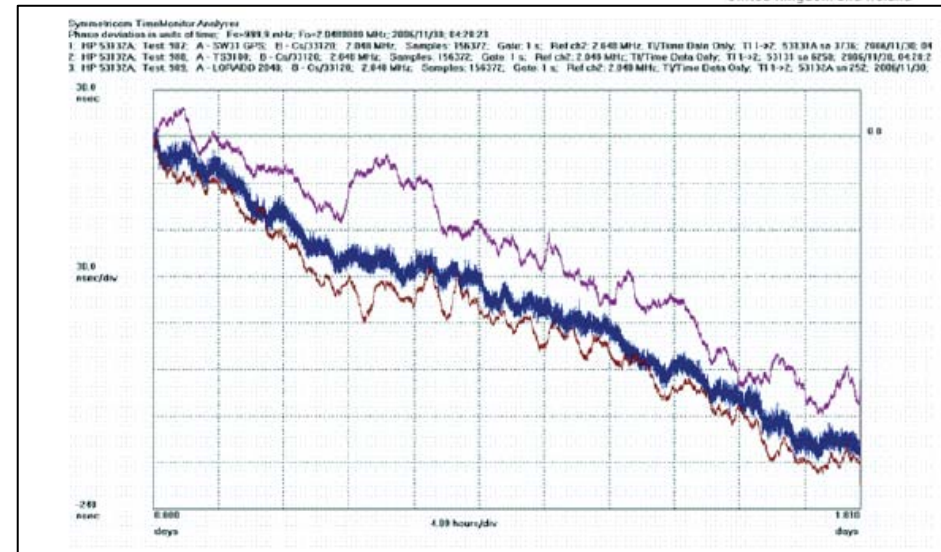
8.73 m (95%) 11.12 m (99%) 97.51% < 10 m

Courtesy: Data Gathering in Support of the GLAs," European eLoran Performance Evaluation", Phase 1&2 - Final report, G. Offermans, W. Pelgrum, A. Helwig

Work funded by The GLAs.

Courtesy: Recent Type Approval Testing of an eLoran Receiver for Telecom Applications, Charles Curry (Chronos Technology Ltd.), Arthur Helwig (Reelektronika)

Work funded by The GLAs.



GLAs' Objectives

- **Extend the Loran transmission trials to March 2010 and beyond**
- Continue our ongoing programme of work and publish the results
- Encourage the development of eLoran expertise both within the GLAs and more broadly
- Work with our international partners to ensure that Loran remains operational and transition plans to eLoran are prepared globally
- 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 in Europe
- Encourage the development of user equipment
- Encourage and support the realisation of the ERNP
- Work with IALA and IMO to ensure that the ERNP is harmonised
- Continue to seek wider support from other user segments and public sector domains to share future costs on an equitable basis
- Work with European colleagues to design and implement an eLoran system for Europe

GLAs' Overall Objective

“[Ensure] the provision of an international, globally-standardised eLORAN PNT (position, navigation and time) multi-modal service, based upon interoperable multi-regional components both as a complement to GNSS and as a stand-alone backup in case of failure, by 2012”

The Case for eLoran, The GLAs

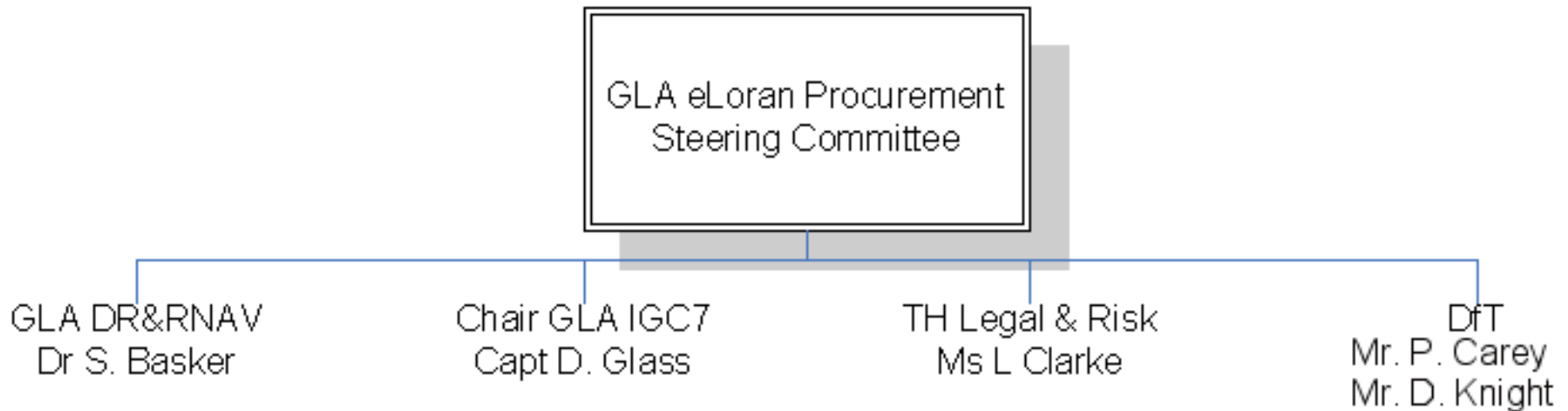


End of the Rugby Contract

- BT contract was to end 31st March 2007 and was extended to end of July
- October 2006 - Chief Executives of GLAs agreed to use a ***restrictive competitive procurement*** process to procure a new service
- Advertised in OJEU 
- eLoran Procurement Steering Committee was set up

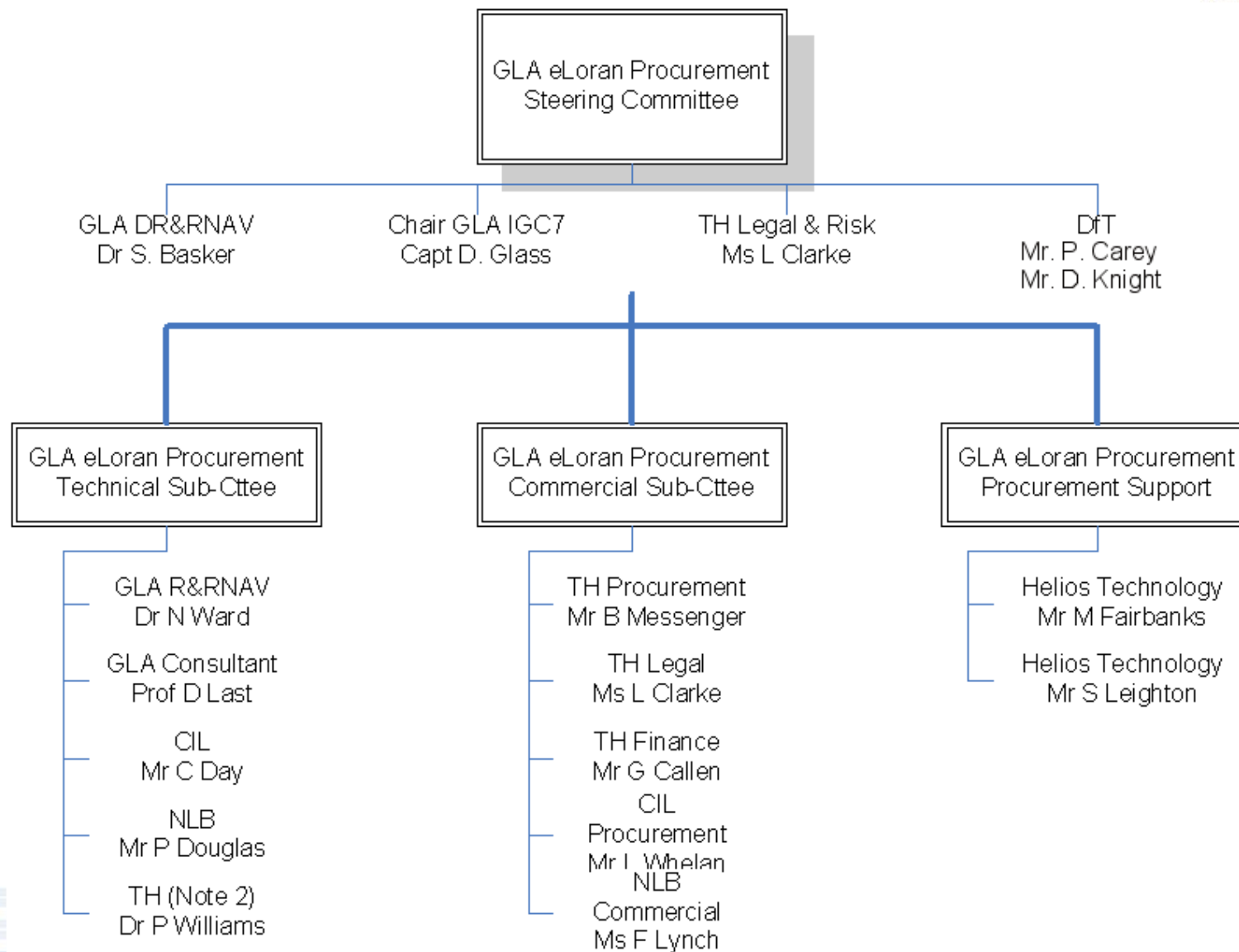


Procurement Steering Committee



- DfT Representative:
 - Procure 15 year service
 - Breakpoints from 2010 onwards

Procurement Organisation



Terms of Reference for Sub-Committees

Technical and commercial sub-committee terms of reference were identical except they reviewed the documents from a different perspective:

- Review and comment on the ITT pack of materials
- Support the tender evaluation process
- Provide *ad hoc* support to the negotiation process

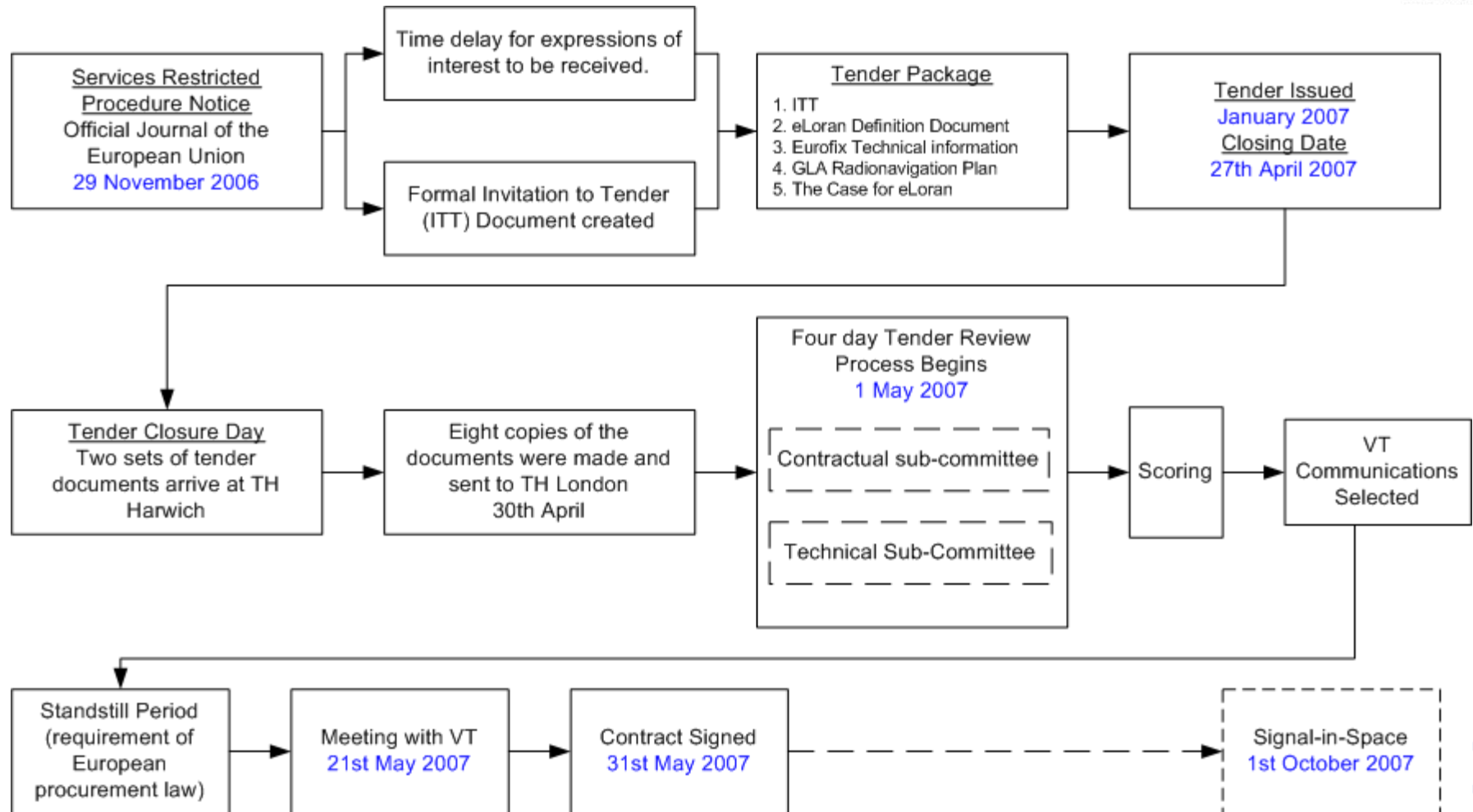


Work Structure

- Statement of Work
 - Loran station infrastructure
 - Integration into the European Network
 - Eurofix, with differential-Loran capability
 - Performance requirements
 - Promotion of the service in order to develop a user base
 - 15-year eLoran service from 2007 to 2022
- Two Phases
 - Phase 1 – Development phase using borrowed French Transmitter
 - Phase 2 – Operational phase from 2010 onwards using a new transmitter



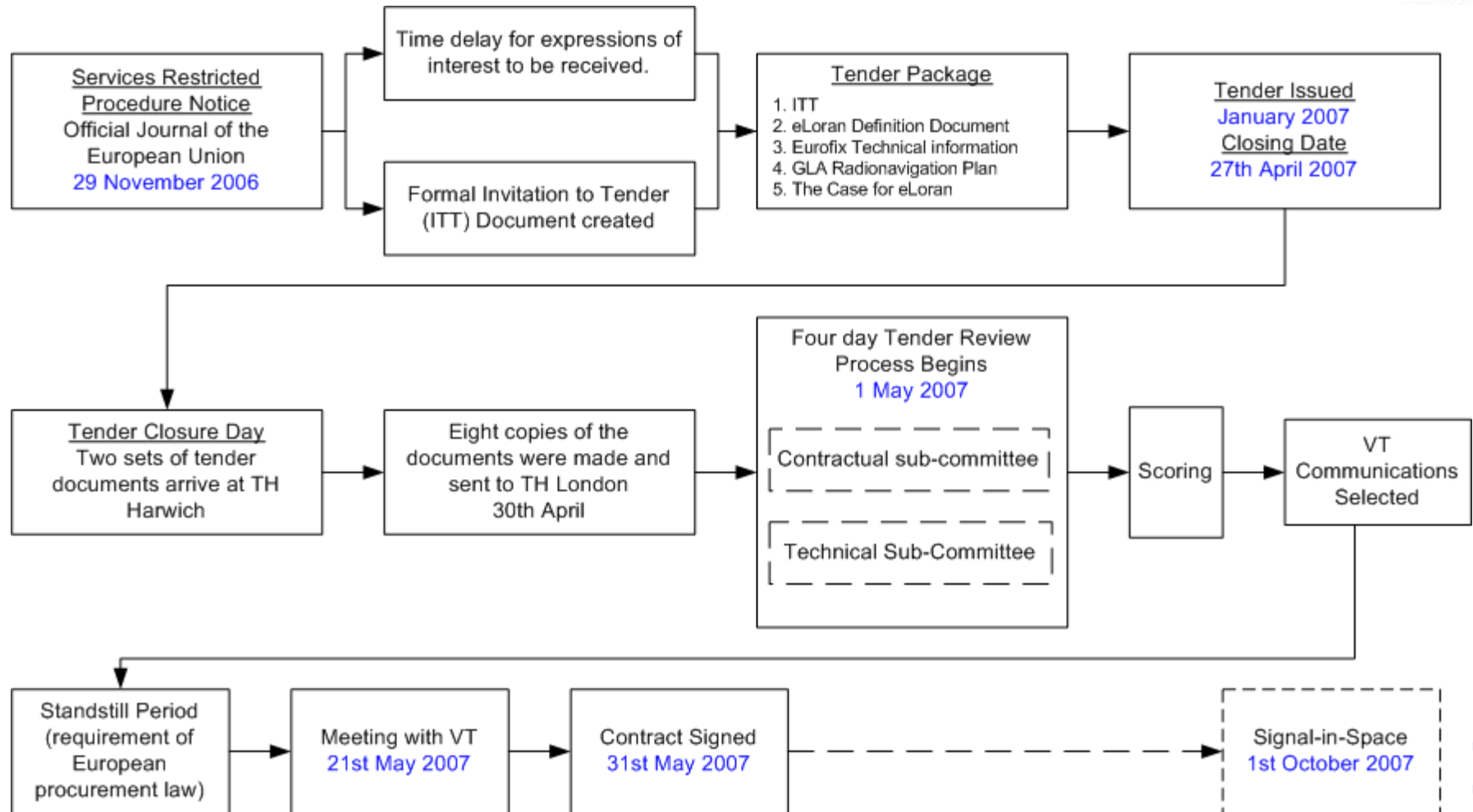
Procurement Process



Award Criteria

Criterion	Maximum score	Weighting (%)
Technical , e.g. compliance between the tender requirements and the performance of the proposed solution	100	25
Programme , including adherence to timescales, quality of the proposed programme plan, approach to risk management, etc	100	25
Financial , including but not limited to price, transparency with which the price is derived, incentive and penalty schemes associated with performance, payment profile, benefit sharing on expansion of the service beyond the maritime sector, financial stability of the company, etc	100	25
Contractual , based on compliance with the proposed terms and conditions contained herein	100	5
Team capability , including but not limited to corporate experience of LORAN and related LF systems as well as the relevant experience of the key staff proposed for the work	100	20

Procurement Process



Contract Signed!

Release date: Thursday 31 May 2007

Enhancing safety and protection of the marine environment:

The General Lighthouse Authorities award a 15-year eLoran contract to VT Communications

The General Lighthouse Authorities (GLAs) today (31 May 2007) announces the award of a prestigious fifteen-year contract to VT Communications (part of VT Group plc) for the provision of a state-of-the-art enhanced Loran (eLoran) radionavigation service to improve the safety of mariners in the UK and Ireland.

The first development phase of this contract, until 2010, will build on existing successes and provide a focus for a European agreement on eLoran service provision. This would then trigger the start of the operational phase from 2010 onwards...



Transition to Phase 2

The following conditions must be met:

- Positive results from Phase 1 – by 2009
- Clear evidence of continuation of the Loran system by European partners
- The UK becoming party to an international agreement on the establishment and operation of a Loran system
- Evidence that the requirement for the Contractor satisfactorily to procure, install and integrate the Replacement Transmitter shall be met



- New Containerised Enclosure for the Transmitter
- Uses existing site infrastructure
- Integration into existing complex RF environment
- Unmanned operation and minimisation of through life costs
- 2 stage Program CFE TX yrs1-3 New VTC TX Yrs 4-15
- The Antenna is designed specifically for this Project

Go Pulse

ID	Task Name	Start	Finish	Duration	2007											
					May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
1	Contract Signature	31/05/2007	31/05/2007	0d	◆											
2	Design & Development	01/06/2007	28/06/2007	28d		■										
3	Procure and Manufacture	01/05/2007	12/08/2007	104d	■	■	■	■	■							
4	Site Installation	31/05/2007	25/08/2007	87d		■	■	■	■							
5	Test & Commission	05/09/2007	22/09/2007	18d					■							
6	On Air on Test GRI	01/10/2007	01/10/2007	0d						◆						
7	Static & Dynamic Calibration	01/10/2007	29/11/2007	60d						■	■	■				
8	Full Service Commences	01/12/2007	01/12/2007	0d									◆			

5 Months !!

2 Months

- Total end-to-end service provision
 - Flat Expenditure profile over entire service life
 - Fixed quarterly fee
 - Availability of 99.8% with Robust penalty regime
- VTC is contracted to provide a Signal-in-Space
- Total transfer of risk for service delivery
- Method of delivery is VTC's concern
- Went on Air 1st of October on Test GRI

- Future work
 - Complete Testing and Commissioning
 - Complete DLoran & UTC broadcast Installation
 - Commence full eLORAN service 1st of December
 - Procure, install New Transmitter in 2010
 - Operate the Service until 2022

Conclusions

- VTC has conceived, designed, procured, installed, commissioned set to work a new antenna system and novel building.
- VTC will maintain the new service for the next 15 years
- Total end-to-end service provision
- Fixed Quarterly fee for the contract duration
- Demonstrates VTC's ability to work closely with its clients to deliver innovative solutions for VLF/HF

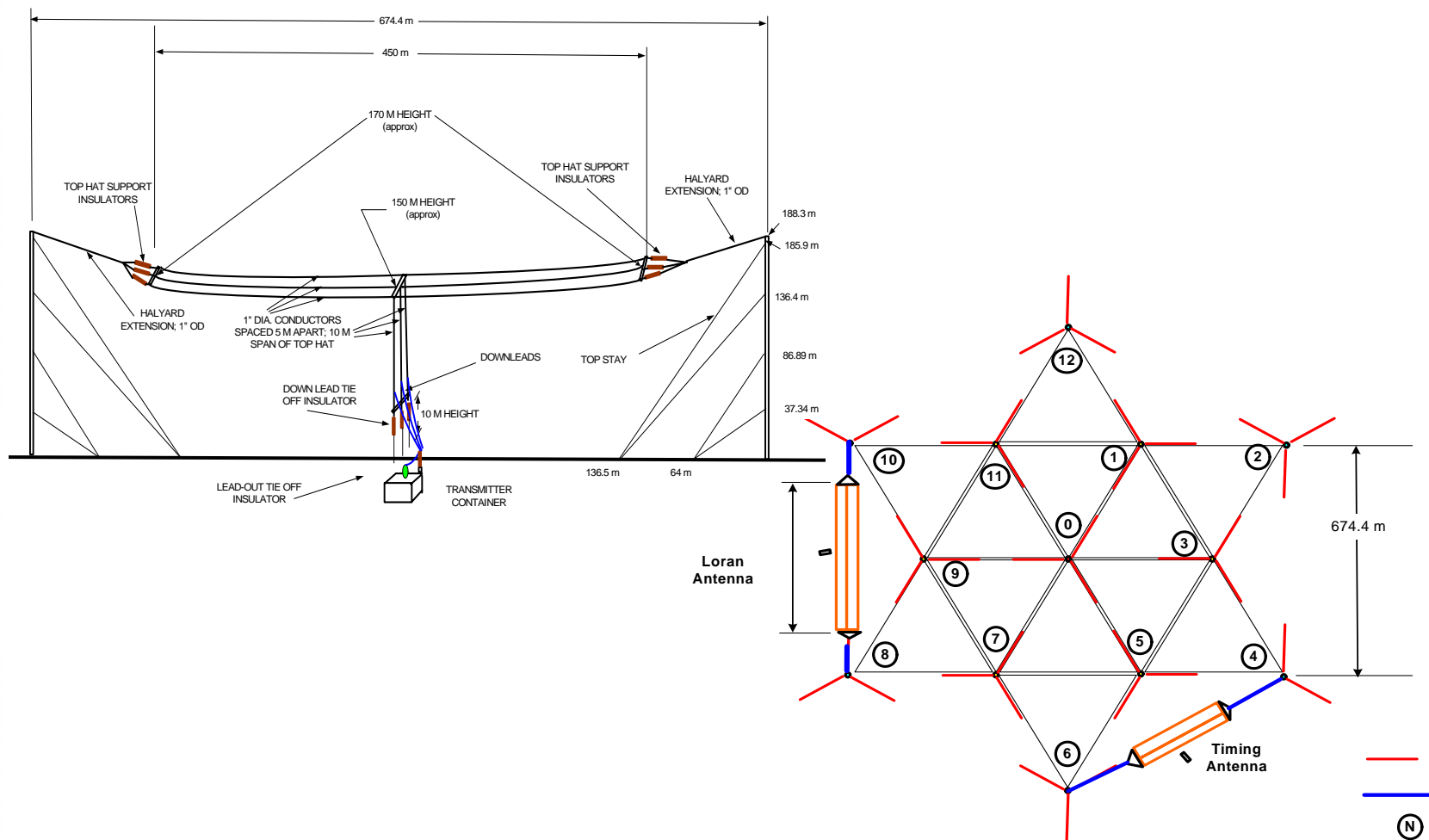
Site Pictures



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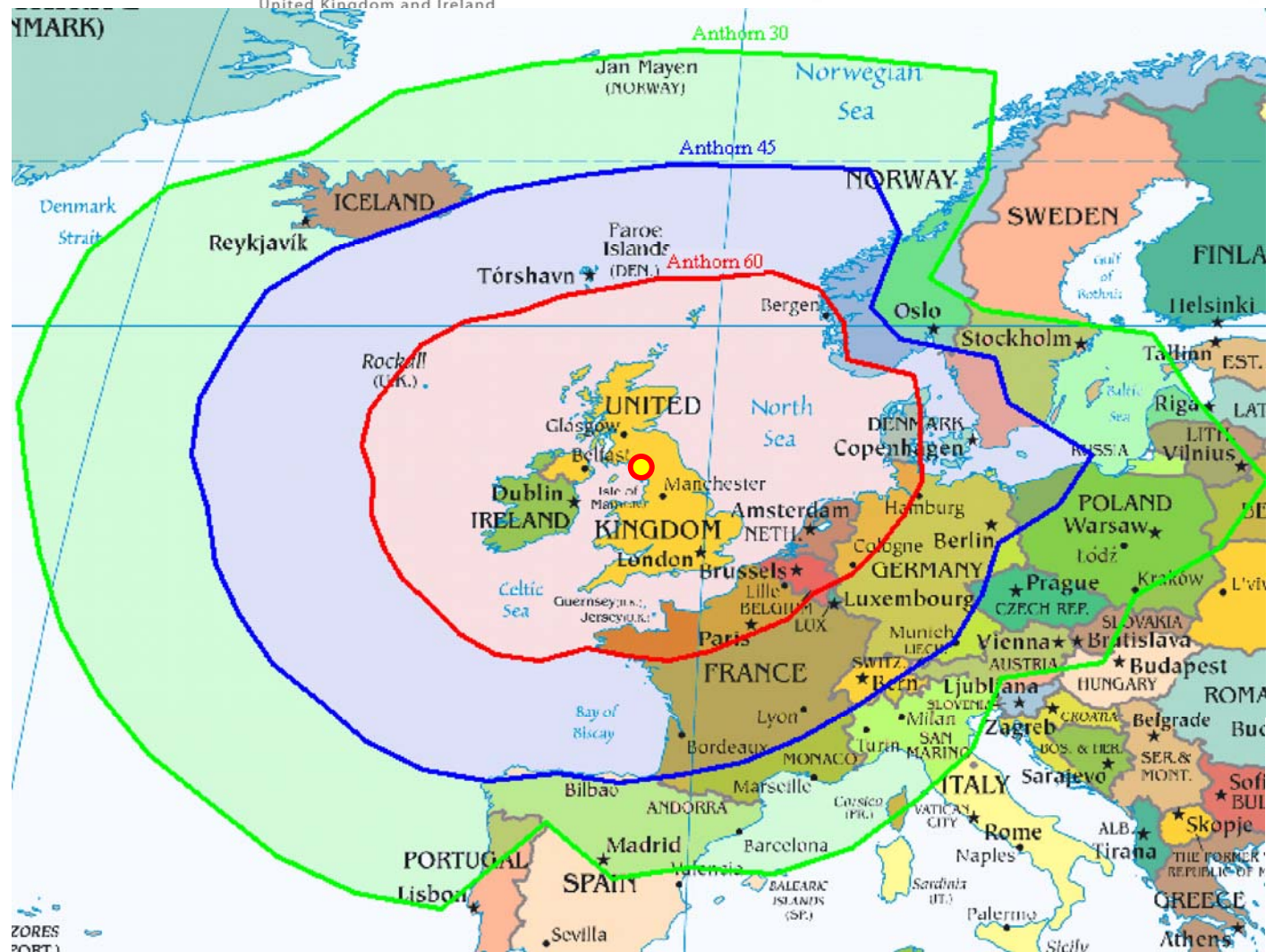
VT Communications



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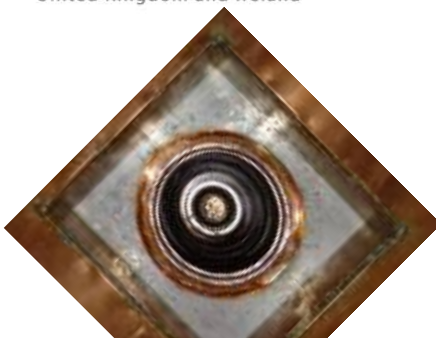
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VT Group

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VT
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Questions

