

Loran C in the 21th Century

ILA33 Convention

The French policy

The French Ministries planning

The Ministry of Defence foresee

- There is a need for LORAN C at least until 2015
- It is necessary to maintain the existing coverage
- Extensions of the existing coverage, to the south (west and east) will be of great interest

The Ministry of Infrastructures, Transport, Spatial planning, Tourism and the Sea foresee

- There is a need for a back up for GNSS (GPS today, GALILEO tomorrow) (i.e : VOLPE report)
- The quality of the data delivered for the positioning of ships must be guaranteed, for VTS, AIS uses
- Loran C is part of the French maritime radionavigation plan (1997)
- Solutions must be developed to address multimodal uses (hazardous goods transportation, ...)



A technical and financial report

A technical and financial short report must be completed :

- Technical feasibility
- Up grading of the existing stations
- Up grading of the new chains
- Location of new stations
- Annual operational costs

France is working to define schemes, and collect data to do so, to provide technical solutions :

- System parameters
 - ✓ Emission delay
 - ✓ GRI
- System synchronisation
 - ✓ Master and secondary sites must receive each other's signals
 - ✓ UTC must be disseminated



The goals of the study

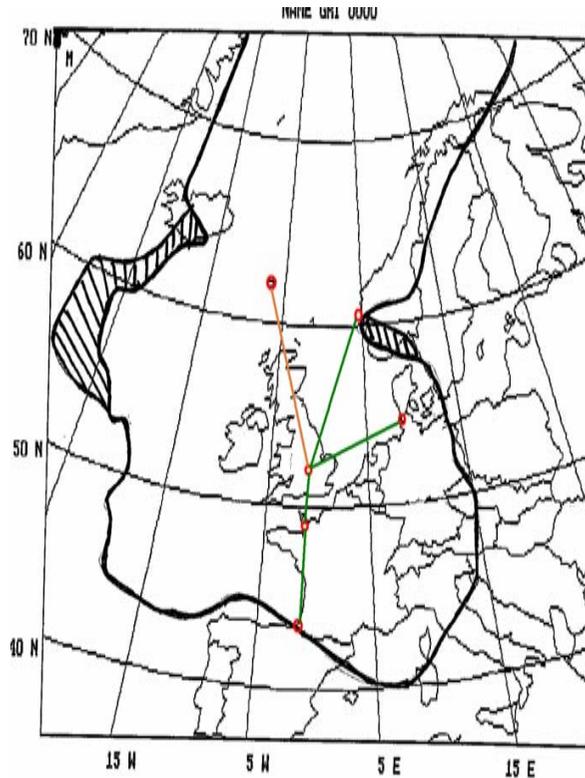
- What could be Loran coverage until 2015 (at least)
 - ✓ For maritime approaches
 - ✓ For land transportation, in relation with the national territory

- What are the freeze system parameters
 - ✓ As regard to users
 - ✓ As regard to control system

- How to began negotiation
 - ✓ With all possible partners
 - ✓ With the European Community



The new UK station



UK is implementing a new station in Rugby, location chosen due to the existing towers

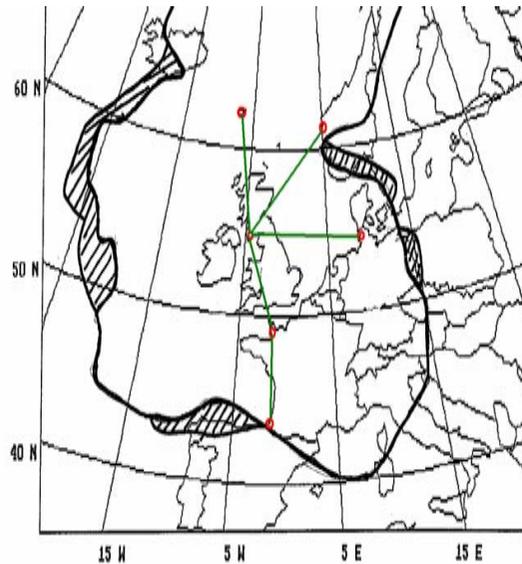
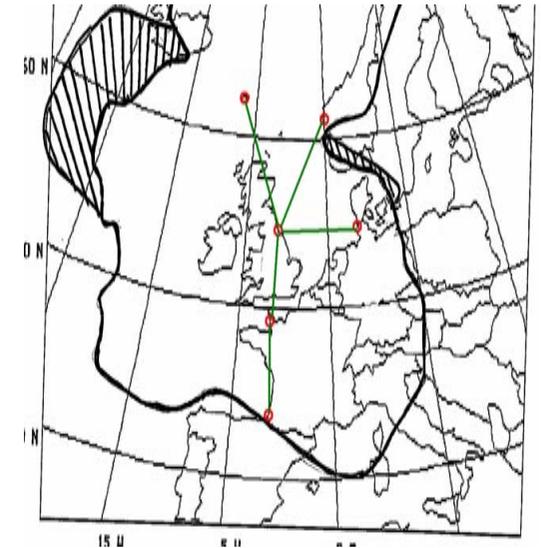
The UK DOT ministry decided on this effort to make tests evaluating Loran for time and frequency and GNSS back up purposes

France and UK will sign a MOU, making available for that project the transmitter bought for the never implemented NELS Loophead station

An other site in UK ?

Rugby is not the ideal site, especially because it is too near to Lessay and too far away from Edje, and because of possibility of freeze-thaw conditions over the transmission path

If it is possible to reuse existing antennas, or to build a new antenna, at a location that will be better, as shown on the maps



Information is needed

France wants to collect information, and letters have been sent or will be sent to the following countries :

- Denmark : A positive answer has been received, and France will deliver the funding to guarantee the possibility for Ejde to continue operations
- Germany : A letter has been sent to ask if the Sylt station will remain as a Loran C station in the future
- Italy : A letter has been sent to determine the possibilities of putting the Sellia Marina station back on air using the Loophead equipment
- Norway : A letter will be sent to learn what will be the delay before closing the Loran stations, and to know if there is a plan for each station
- Portugal : A letter will be sent to inquire if a new station will be implemented

A meeting with representatives from France and from the Spanish Ministry of Transport could be held in the following months, due to the questions raised by the Helios report on the ERNP project.



What's new ?

- There will be soon a new Loran C station in Europe (Rugby in UK).
The UK shipping minister David Jamieson called the “vulnerability” of satellite navigation systems means that a terrestrial alternative is needed. ...He announced that the UK government will work closely with regional lighthouse authorities to adopt Loran-C as a back-up. (Lloyd's Register – Fairplay web links)
- We received a positive answer from Denmark to examine the possibility of maintaining the Ejde station on air
- Germany makes a statement on the fact that the only future use of the existing station site of Sylt will be for a Loran-C private service
- The Helios report on the ERNP project clearly indicates that Loran is the best complement to GNSS that could enlarge the scope of applications for multimodal users and offer a back up for the users that need one, and could do so at an acceptable cost in comparison to its effectiveness
- People in the French aviation administration are considering Loran as a future solution for en-route navigation, in case DMEs are removed
- The US DOT Secretary has sent Congress a very positive letter on the future of Loran



The ERNP project – Loran highlights

The European Union Radio Navigation Plan, Draft 1.0 is very positive about Loran. The reports indicates that :

- E Loran offers benefits in some key areas, presents the user with potential choices to the satellite based services and can mitigate certain technical vulnerabilities of these as well as improving the robustness of certain applications, for example where positioning and navigation is required in restricted areas (pages 51 and 52)
- The analysis of the policy benefits derived from the adoption of Loran C services shows that there are 1 benefit of significant importance (improved robustness of radio navigation services) and 7 benefits of moderate importance for Loran C, as compared to only 6 benefits of moderate importance for EGNOS (pages 52 to 54)
- Loran C reaches a potential mass market of users (page 54) , has a signal that complements the satellite services and therefore encourages operability (page 56), and also provides the first trans European non-GNSS timing service (p 57)
- The relatively cost effective use and adoption of Loran C, in particular to mitigate satellite disruption for maritime and land users, appears to be a positive component of any European radio navigation plan (page 66)
- The introduction of Loran C is a clearly cost effective option. EU-level funding may be appropriate to secure the policy benefits delivered by Loran C (p 72)
- The criteria factor is whether EU needs to take an active role in order to achieve the coverage : there is no cohesive policy or guideline to introduce and encourage the safe use of aids : this is the role that the EU may be required to take.



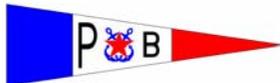
Our objectives, for France

- To promote, as European Union Member State, at least for the maritime and terrestrial modes of transport, the proposal made by the Helios Technology “European Union Radio Navigation Plan”, on the need to include Loran C in the core of the ERNP
- To maintain, and if possible extend the Loran C coverage in Europe, for the maritime and terrestrial modes of transport. To do so, we must do our best, in application of the cost/effectiveness analysis, to keep the existing sites on air , and to add sites to the existing ones
- To give visibility to the industry, and the users, by a clear political message
- For maritime mode of transport, to work to put in application the IALA recommendation about the need to have two independent systems to provide data location information for systems as AIS, instead of one, as specified today by IMO
- To support the studies to develop standards (IMO, IEC, ..) for hybrid receivers
- To conduct specific trials in France to verify that the mix of systems (GNSS, Loran C, Eurofix), is adequate to meet specific requirements (harbour approach, information about hazardous goods location in the road traffic, ...), and to see if there are possibilities to make those requirements mandatory

Worldwide objectives ?

We must enlarge the knowledge about Loran

- There are only a few users in Europe : navy, weather forecast balloon. This is because of an unrealistic decision taken at the beginning of the implementation of NELS, to modify the frequencies of the chain, which made it impossible for the existing receivers to be used
- The situation is totally different in the other parts of the world. There are more than 500,000 users in USA (mostly in the marine and general aviation communities), and 20,000 in Asia (mostly fishermen)
- Industry must be encouraged to invest in new receiver development, and to offer modern equipment to users
- We have to put the available information at all the levels, including the political one



Our agenda for the next months

- France will sign the MOU with UK to loan the “Loophead” LORAN-C transmitter , as soon as it will be possible
- France will propose a MOU to Denmark to run Edge, to be signed during the first months of 2005
- A letter will be send to Norway, to see if they are possibilities to cooperate, taking in account the UK and Germany decisions, and the ERNP report
- A new letter will be send to the Ministry of Transport in Germany
- In case of answer to the letter send to Italy, a meeting will be proposed to be held to make an analysis of the status of the Seilla Marina station
- A meeting will be proposed with Spain (we are expecting a contact)
- France will support the ERNP proposals, especially for land and maritime modes of transport
- Technical studies are on-going to prepare extension of the coverage
- France will stay open to contact with other countries

