

## **The international recognition of the Eurofix data link**

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During the past ten years the Northwest European Loran System (NELS) was working intensively to set up an operational Loran-C transmitter network in North-western Europe. During the last years the NELS also undertook the Eurofix data link feasibility study and started to equip a couple of its Loran-C transmitter sites with Eurofix data link modifications. The feasibility study produced promising results.

In fall 1999 the NELS recognised that Eurofix data link receivers could only be used for safety applications when they were certified or type-approved. It was recognised that this would require a published standard to test Eurofix data link equipment for safety applications. Furthermore, it was recognised that truly global modes of transportation like shipping or aviation would need an internationally recognised standard for that purpose.

Therefore the NELS Steering Committee tasked a group of experts to develop the appropriate input documentation for the appropriate international fora. Thus the NELS Steering Committee invoked the so-called NELS GAUSS Initiative Group. The group began its work in January 2000.

The group identified the need to produce an internationally recognised description of the Eurofix "signal-in-space". After some research it was determined, that the competent international body, which maintains such "signal-in-space" descriptions, was the International Telecommunication Union (ITU), to be precise: its Radiocommunication Sector (ITU-R). The ITU is part of the system of the United Nations Organisation; it is a specialised agency of the UN. It controls the global use of all radio frequencies and their transmission characteristics.

Furthermore, it was determined that the existing Loran-C/Chayka- and Decca-standard, the so called Recommendation ITU-R M.589, could be easily upgraded to do the job: The Decca system has been shut down at that point in time. So this part was replaced by the definition of the Eurofix data link, while also introducing language, which would allow for future, even more enhanced data link protocols. This was done during summer 2000, and the Draft Revision – after much liaison with interested and affected parties – was submitted to the appropriate Working Party of the ITU-R for consideration and approval in fall 2000.

The proposed Draft Revision was approved in fall 2000 and eventually adopted by ITU-R in summer 2001. As a result, there is now available an internationally recognised standard for the Eurofix data link. Since the NELS refunded the inventor of the Eurofix data link, the TU Delft, The Netherlands, the data link may be freely used by every mode of transportation.

Manufacturers, who want to build Eurofix data link transmitters or receivers, may now do so securely as far as the definition of the signal is concerned. International bodies such as the International Electrical Commission (IEC) may now develop test standards, based on the Recommendation ITU-R M.589, to allow test houses to certify or type-approve Eurofix data link receivers for safety applications.

Already in late 2000 the NELS Steering Committee formally recognised the swift and successful work of its GAUSS Initiative Group. However, since the NELS is a regional organisation only, but the Eurofix data link description is now globally available, it was mutually considered appropriate, that the International Loran Association (ILA) took over the ongoing standardisation work, which is still necessary to build truly global safety applications, which make use of the Eurofix data link. Therefore, the ILA set up the ILA GAUSS Standardisation Group to complete this task in summer 2001.