THE EURIDIS PROTOCOL: **a safe and reliable remote meter reading solution which guarantees a good compatibility between various items of equipment and ensures appropriate development geared to the new deregulated markets.**

The EURIDIS technology, introduced at the beginning of the 1990s, is an efficient and low cost solution, now well proven in many countries for the remote management of energy meters. About ten million meters using the EURIDIS interface have been installed all over the world, mainly in Europe, but also in South America and North Africa, generating new needs and new applications.

EURIDIS is the only international standard (IEC 1142 and the latest version IEC 62 056-31) working with twisted pair cables for the remote reading of residential meters.

The basic EURIDIS solution uses a field bus for communication. Each meter is linked to the EURIDIS local bus, which consists of a two-wire cable connected to a magnetic coupler, generally located in the public domain. The operator simply connects a handheld unit to the magnetic coupler so that it can read each meter safely. This is the best and most economic solution in the case of new housings.

Some difficulty may, however, be experienced when installing the two-wire EURIDIS bus in some existing housings. Some manufacturers have handled this problem by introducing new designs, whereby specific gateways are connected to the EURIDIS meter interface. This allows EURIDIS meters to be used with other kinds of communication media, such as RADIO, PLC, PSTN, GSM or ETHERNET.

In the new deregulated markets, EURIDIS is a good, and maybe the only, standardised AMR interface for residential and small industrial meters.
Actually, the EURIDIS standard protocol can be adapted to make meter reading easier, or provide more advanced services, such as storage of load curves. At the same time, EURIDIS can provide the guarantee to any utility of the perfect compatibility between various items of equipment from different manufacturers.

Users of the EURIDIS protocol (manufacturers and utilities of which EDF) have grouped together to form the EURIDIS Association (www.euridis.org) in charge of the development, follow-up and widespread use of AMR products.

Among its actions, the Association created two Technical Committees in 2003:

- **one was in charge of drafting test specifications for the certification of the products in order to ensure the users of perfect interoperability,**

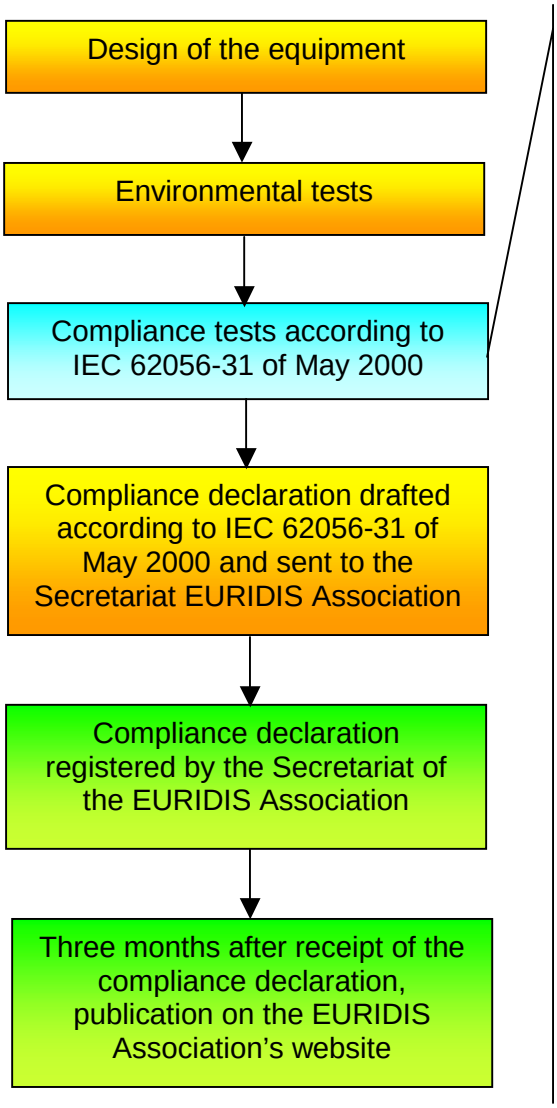
- **the other in charge of developing the standard in order to adapt it to the needs of the market.**

EURIDIS: the test specifications which guarantee a perfect product interoperability

Making the test specifications available allows manufacturers to state that their equipment is compliant and customers to have the guarantee that the equipment of the different makers features perfect interoperability.

The wide distribution of the EURIDIS bus and the growing number of manufacturers of metering equipment in compliance with the EURIDIS standard (*IEC 62056-31)* have made it necessary to put the test specifications on the Web. These specifications allow manufacturers to assert the compliance of their metering equipment with the EURIDIS bus. Thus, having a set of test methods at their disposal, the newcomers to the market are able to guarantee smooth communication and interoperability with other equipment complying with the standard. Making the test specifications available on the Web offers excellent accessibility to all concerned.
Customers will be able to find the list of all the equipment complying with the standard on the website, as well as the declaration of compliance of each item of equipment present on the list. They thus have the guarantee of the perfect interoperability of equipment made by the various manufacturers.

Procedure:



Test specification contents:

The tests are divided into two chapters, one for primary stations and the other for secondary stations.

Description of the scope of the tests:

Physical tests:
Modulation rate, carrier frequency, characteristic of the signal transmitted.

Functional tests:
Check of all status transitions and of equipment reactions.
Syntactic inspection of the different frame fields.
At the applicative level, tests of the services used by the equipment.

Time compliance tests:
Check of all the time periods specified in the standard.

Communication / interoperability tests:
They must be performed with products listed on the site or products mentioned as a reference in the field.

Endurance tests:
The frame repetition rate is measured on a minimum number of 100,000 communications.

EURIDIS: An evolutive standard to keep pace with new deregulated markets

The Euridis Association has decided to set up a Technical Committee entrusted with defining and carrying out functional and technical developments, so as to be able to present them for standardisation in the near future. This improvement approach should allow it to move forward into a new millennium and ensure its development. A review of the IEC 62056-31 standard is thus planned in 2005.

Euridis constitutes a protocol that is highly adapted and optimised for the reading of residential meters. Nevertheless, in view of its rapid growth and new outlets, some of its characteristics have been limited in order to favour its development.
With this purpose in mind, a group of users got together to define the scope of this development. Improvements were consequently defined with respect to topology, efficiency and ease of use.
As far as topology is concerned, it is proposed to reflect on optimising performance as regards the length of the bus (currently 500m), the structure of the frames, the number of meters on a bus (100 in the current standard) and the size of the data conveyed.
Concerning the efficiency of the protocol, a study will be made of the possibility of increasing the communication speed so as to claim speeds beyond the present 1200 baud level, as well as to permit more efficient reading sequences.
As for ease of use, this aspect will focus on harmonising the typing of data and addresses so as to favour interoperability.

These developments will be studied in partnership with a university research laboratory starting in September 2004. This collaboration should make it possible, with the implementation of modern and effective means of simulation, to come up with an optimum for high-performance development.

Enhanced compatibility will certainly be one of the criteria of these evolutions and one of the guarantees of its success, all of the devices currently installed to be compatible with the developments proposed.

From now on, we are able to use the Euridis protocol for new applications made necessary by the inescapable opening of the markets: reading of the load curves, permanent access, compatibility for gateways with communication media, such as PSTN, GSM and GPRS, as well as Internet connectivity.

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