Keeping Software Quality on Track

The Client

Invensys Dimetronic Signals, Madrid

Invensys Dimetronic Signals (IDS) is a Spanish company which has 45 years experience of implementing safety critical and safety related state-of-the-art technologies. Today IDS is a market leader in the development and application of advanced technologies, train control and signalling systems.
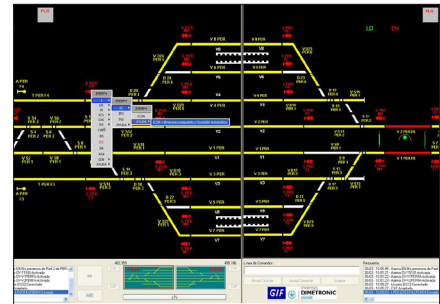
IDS sells the systems it develops to a worldwide market and wherever they are utilised a key requirement is the ability to demonstrate high levels of reliability and system integrity to the appropriate railway authority.

The Projects

A number of projects have used the *LDRA tool suite* over the past 8 years. The languages utilised have been **C/C++, Ada 83/95 and Pascal**. The projects included:

- PLO (Puesto Local de Operación) / SCC (Small Control Centre)

- Reliable Data Storage for MoviolaW (Data Storage of WESTRACE interlocking information)

- WNCM (WESTRACE Network Communications Module)

- Data Compilers
  - LEU: Lineside Encoder Unit
  - RBC: Radio Block Centre
  - DTG-TC: Distance To Go - Track Circuit
  - TBS: Transmission Based System

Screenshot of the Local Control Panel for Spanish High Speed Lines

With all of these projects the key requirements were tool flexibility and ease of configuration. The software also had to be developed and implemented to satisfy the most stringent safety reliability standards including CENELEC, MISRA C, EN 50128 and EN 50159.

The Requirements

Francisco Lozano

Francisco Lozano, IDS Main Line Area Manager, R & D Division, summarised the usage of the tools: " We had specific technical requirements which included checking software quality to ISO 9001:2000, programming standards checking including MISRA C, and host / target testing for our embedded systems software."

The Benefits

Francisco commented that "The tools have been integrated into our testing infrastructure. Before we utilised the *LDRA tool suite* we manually tested source code, which was time consuming. The tools have reduced the testing time by 70%. For one project in particular a team of engineers would have manually spent 2 months checking our code whilst *LDRA Testbed* reduced this to 2 weeks."

The Future

The *LDRA tool suite* has assisted IDS by reducing time to market, improving software quality and reducing costs for the organisation.

Francisco Lozano commented "The number of trained personnel using the *LDRA tool suite* continues to grow and key projects continue to maximise the return on investment, time and technical benefits the tools bring to IDS and our customers."

"Tools have reduced testing time by 70%"

To find out more about saving money and improving quality of service contact LDRA

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