## **Automation Systems and Training**

M. S. Farias<sup>1</sup>, C. S. Borges<sup>1</sup> e-mail: <u>msantana@ien.gov.br</u>

<sup>1</sup> Division of Nuclear Engineering - IEN

Keywords: automation, data acquisition, training

The nuclear instrumentation development laboratory can build systems for internal clients by integrating the latest in commercial data acquisition hardware technology with custom software. The service has particular expertise with data acquisition I/O hardware and the graphical application development environment, with which provide consulting and training for countries of Latin America within the IAEA's Projects ARCAL.

The service uses tools to build custom measurement and automation systems with the client's requirements and to upgrade systems to meet new requirements, or to incorporate new features and technologies. The Figure 1 shows a software screen developed [1].



Fig. 1 – Software screen developed

The laboratory offers services and consultancies to support the graphical programming environment, such as training courses, co-development of graphical applications, review and maintenance of legacy graphical programming code.

The graphical language courses are aimed at new and intermediate users. The course prepares the student to develop test and measurement, data acquisition, instrument control, data logging, and measurement analysis applications using graphical language. The service may also offer training in digital electronics and programming with microcontrollers, FPGA hardware description and electronic CAD.

## References

 Farias M. S.; OLIVEIRA, M. V.; AGHINA, M. A. C.; GRECCO, C. H. S., Radiopharmaceutical Package Monitoring System. In: INAC 2011, 2011, Belo Horizonte. International Nuclear Atlantic Conference, 2011.