approaches TO creating functional algorithms for control systems field equipment in the iter project [[1]](#footnote-1)\*)

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There are several well-established patterns in the ITER project for building fast and slow control systems. These templates rely on hardware and software support of controllers from National Instruments, Siemens, Pentair, Schroff, etc. However, given the complexity and variety of technical systems created for ITER, these patterns cannot meet all the requirements of diagnostic systems. Support issues for field equipment using Fieldbus, Ethernet, GPIB, and other similar interfaces have not been detailed in the ITER project as clearly as for fast and slow controllers.

All control systems need functional algorithms for successful integration into ITER, regardless of the used equipment. ITER offers developers a large number of software tools for interacting with equipment and automating created control systems. All these tools have different stages of readiness, development and documentation, which significantly slows down the process of developing control systems.

This report presents examples of functional algorithm implementation for control systems built on various equipment. The results of the software tools analysis, their performance, advantages and disadvantages of methods of their usage are presented.

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1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/XLVII/E/ru/JJ-Zvonareva.docx) [↑](#footnote-ref-1)