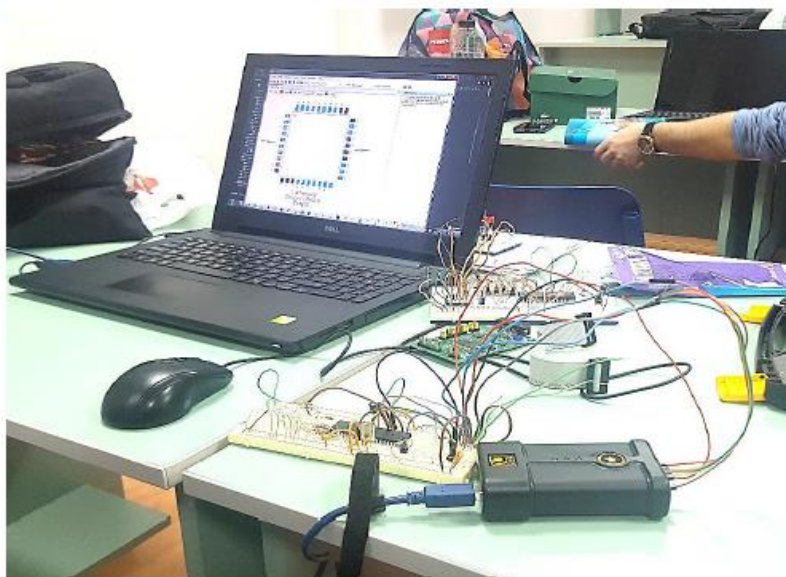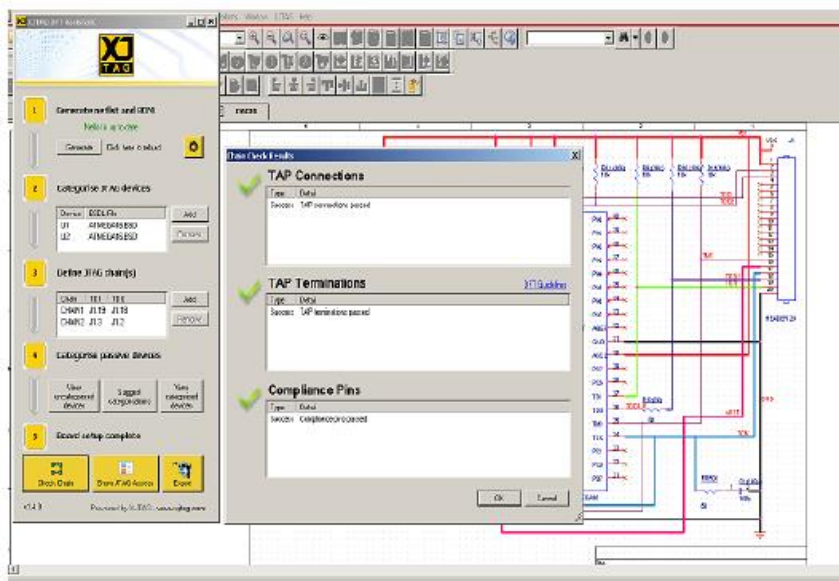# Topology elements of electronic systems

(the former Design for Boundary Scan lecture)



Coordinators: **Raul Ionel** (raul.ionel@upt.ro) & **Anca Dărăbuț** (anca.darabut@upt.ro).
Supported by Alfa Test and XJTAG.

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⇨ The "Topology elements of electronic systems" lecture (the former "Design for Boundary Scan" lecture) proposes the study and implementation of the complete populated electronic board-level product development chain, starting from the specifications study, design phase and ending with the physical prototype testing and validation.

⇨ Our students will use specific state-of-the-art hardware & software technology and focus on activities such as circuit design for testability, circuit validation, circuit implementation and test-related software development. Finally, a comprehensive non-invasive quality evaluation of the student built electronic board prototype attests the project success.

⇨ This subject has direct applicability in the electronics industry, specifically in fields such as Telecommunications, Automotive or Consumer electronics.

🙂 Form of evaluation – Exam, contribution during lectures, laboratory tests, laboratory work, 4 credits.
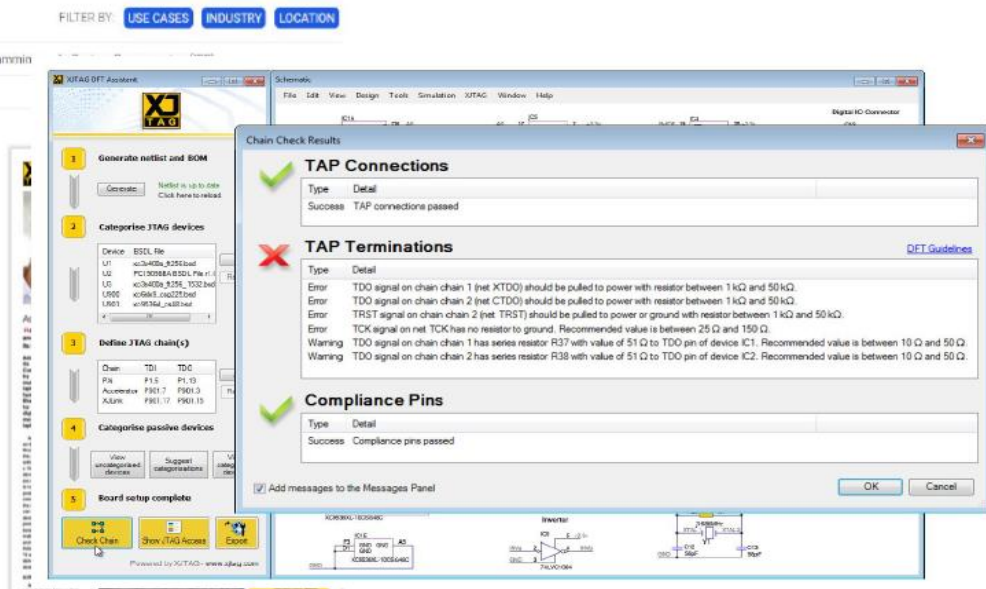
1. P. Kenneth, The Boundary-Scan Handbook, ISBN 978-1-4757-2142-3, DOI 10.1007/978-1-4757-2142-3, Springer US, 1992.
2. B. H. van den Eijnden, F. P. de Jong, Boundary-Scan Test - A Practical Approach, ISBN: 978-1-4613-6371-2, DOI 10.1007/978-1-4615-3132-6, Springer US, 1993.
3. Ben Bennets, Lecture Notes, Boundary Scan Tutorial, http://fiona.dmcs.pl/~cmaj/JTAG/boundaryscan_tutorial.pdf
4. https://www.xjtag.com/about-jtag/ 5. XJTAG Tutorials and Case Studies, available on xjtag.com
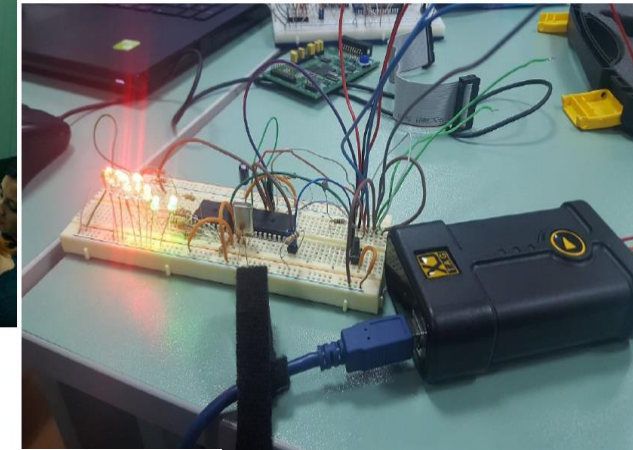
**Diploma Work - Boundary Scan Testing on Student Built PCB**

# Topology elements of electronic systems
## Some images

**The work**
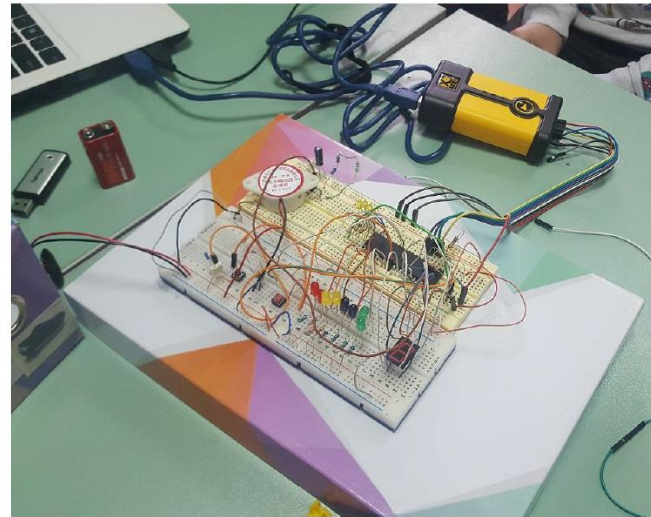


**The flow**
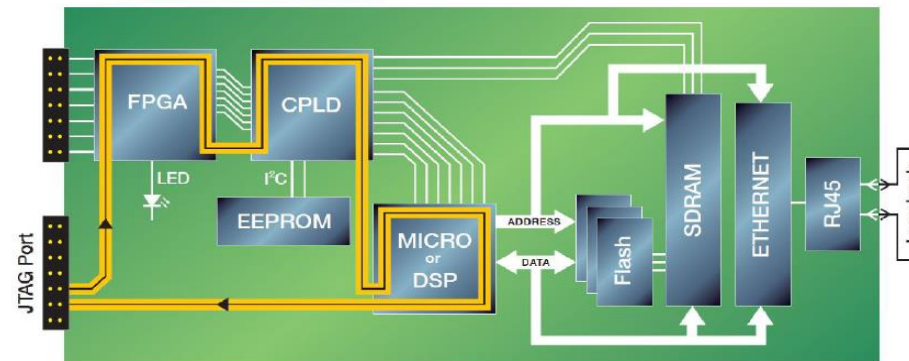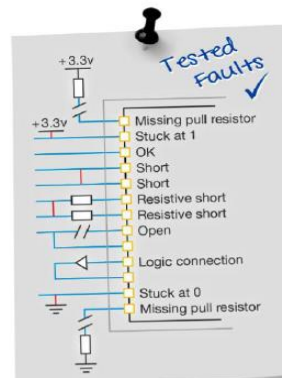
| Study DBS principles | Study DBS PCB Design req. | Design and validate PCB | PCB practical implementation | Hands on PCB testing |



| | PRESENCE | ✓ |
| | CORRECTNESS | ✓ |
| | ORIENTATION | ✓ |
| | LIVE | ✓ |
| | ALIGNMENT | |
| | SHORTS | ✓ |
| | OPENS | ✓ |
| | QUALITY | |

Faculty of Electronics, Telecommunications and Information Technologies

In industry



For extended information, please send your inquiry to **raul.ionel@upt.ro/anca.darabut@upt.ro**, message subject **Optional Topic 9 info**.

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