



ESPOTEL

Advanced Embedded Solutions

Automated R&D Verification and Validation

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NIDays09
WORLDWIDE GRAPHICAL SYSTEM DESIGN
CONFERENCE

ESPOTEL

Twenty Years of Embedded Design



- Annual sales 21.2 M€ (2008)
- 230 employees at 7 locations in Finland
- Leading Finnish R&D services company in the field of embedded systems.
- Full-service design house, delivers system design, electronics design, mechanics design, embedded software design, industrial design and test systems
- Test Systems Division:
 - R&D Test Automation
 - DfT, Test Specifications
 - Mechanics, Electronics, Software, Turn Key Solutions
 - Test System Platforms
 - SPC Software, Six-Sigma know-how

Design for Test

- **Services:**
 - Design for Test
 - Economics of tests
 - Test Strategy
 - Test Specification
- **Mission:**
 - Understand test requirements for the product life cycle
 - Develop test strategy for the product
 - Develop test validation plan for the product

Application Development

- **Services:**
 - SW design
 - HW design
 - Test fixture design
 - Verification and validation
- **Mission:**
 - Develop tester against specifications
 - Assemble testers with documentation
 - Perform test system verification (FAT/SAT)

Production

- **Services:**
 - Quality engineering (SPC / MSA)
 - Change management
 - Test system Maintenance
- **Mission:**
 - Monitor and Improve production processes
 - Control change processes for the testers and test processes
 - Keep test system up and running

Product Lifecycle

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PROCKET SPC TOOL

Mission:

- Process oriented tool for analysing test data to carry out specific quality improvements in real time.
- Modular platform to provide scalable features for different process needs.
- Easy to use and automatic on-line capability

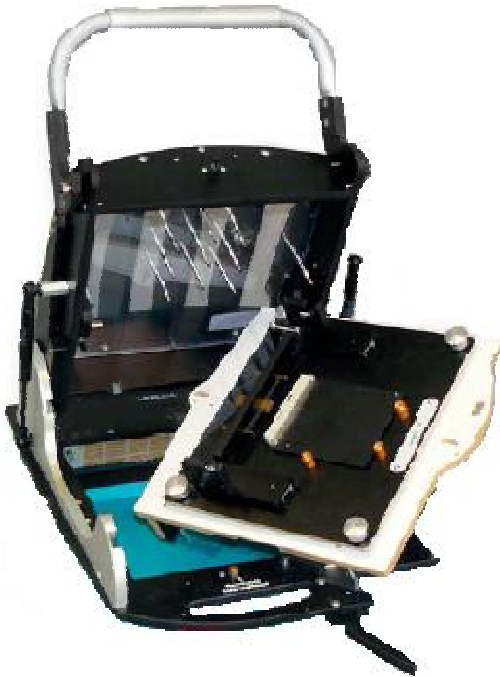
Solution:

- LabVIEW based application with TestStand integration capability
- Functional modules that are selectable
- Customer oriented development roadmap based on modular platform



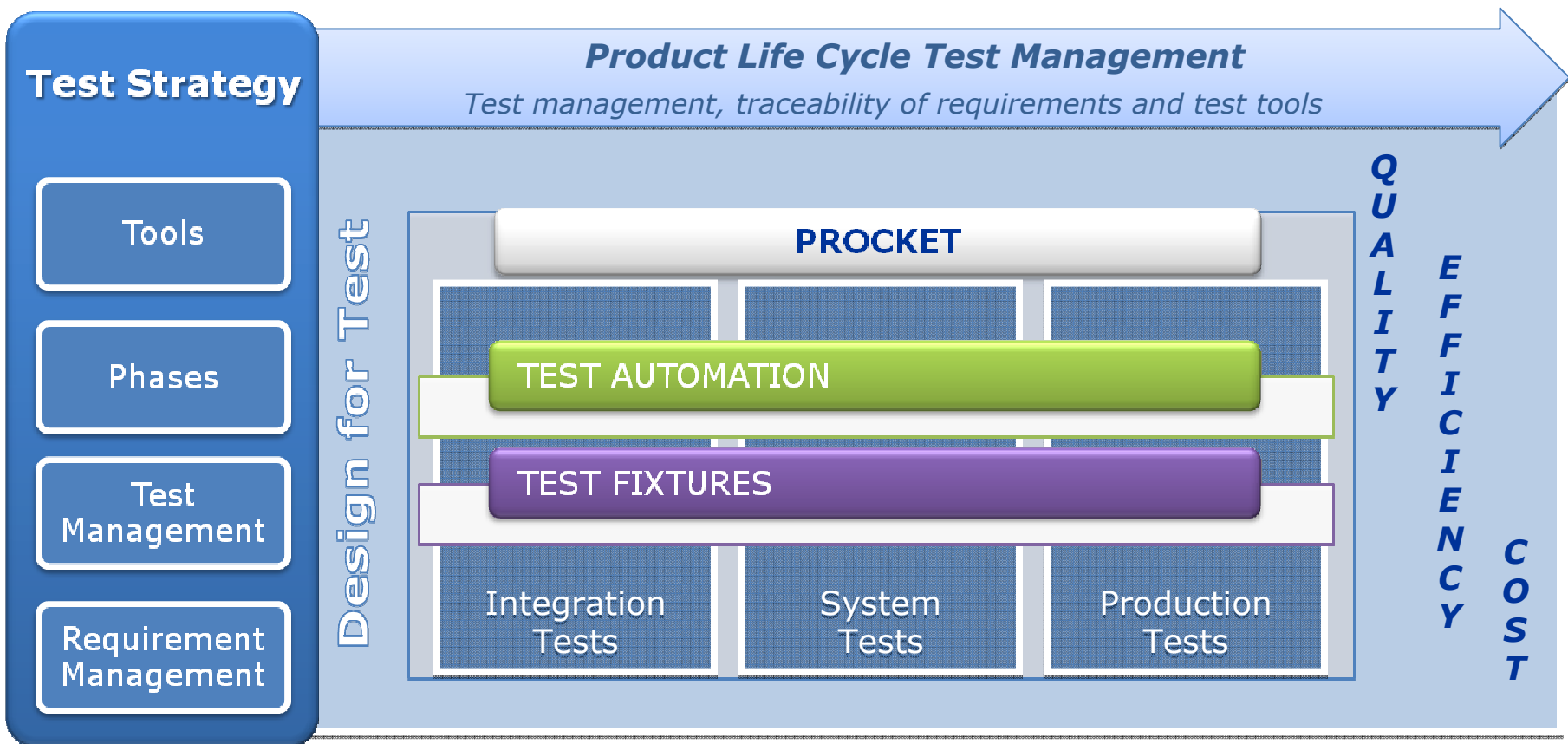
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Procket **LIGHT** Platform **NEW!**



- Fixed test adapter frame with changeable pin bed cassette
- Both tall and small rack cabinets are available
- Suitable for all production volume levels
- Medium to high product mix
- Low to medium UUT complexity
- One side (bottom) contacting with pin bed
- Lowest variable cost per product
- Fast and effective to add new products
- Moderate flexibility





IEEE-829 "Standard for SW Test Documentation" as basis

Sample content:

1. Introduction
2. Test Items
3. Features to be tested
4. Features not to be tested
5. Testing Areas, Test Types and Test Coverage
 - Module testing
 - Integration testing
 - System testing
 - Performance testing
 - Functional testing
 - Production testing
 - ...
6. Pass / Fail Criteria
7. Suspension Criteria
8. Deliverables and reporting
9. Testing tasks
10. Environmental needs
11. Responsibilities
12. Staffing and training needs
13. Schedule and synchronization
14. Risks

