

## Workshop: Accelerated Reliability Testing

**Date:** 2013-12  
**Venue:** Company

The goal of the course is to enable the designers and test engineers to conduct accelerated reliability tests (AST, ALT) in practice. The methods with examples are presented and can be used in product design projects. Previous knowledge needed: basics of statistics. Bring a scientific calculator with you.

<b>Accelerated Reliability Testing</b>	
<i>8:15 – 8:30</i>	<i>WELCOME and introduction to course program + coffee</i>
<b>8:30 – 12:00</b>	<p><b>1. Introduction: Traditional Lifetime Testing and Reliability Testing Today</b></p> <ul style="list-style-type: none"> <li>- Traditional reliability testing: Reliability determination and compliance tests</li> <li>- Comparing traditional and accelerated tests</li> <li>- Requirements on product testing due to business models</li> </ul> <p><b>2. Design for Reliability, Role of Testing</b></p> <ul style="list-style-type: none"> <li>- Product reliability management program</li> <li>- Reliability methods supporting the tests: Risk Analysis and FMECA</li> <li>- Timing of testing in product development</li> </ul> <p><b>3. Methods of Accelerated Life Testing (ALT)</b></p> <ul style="list-style-type: none"> <li>- Test time compression with elevated stresses</li> <li>- Failure models and failure distributions, life time determination</li> </ul>
<i>12:00 – 12:30</i>	<i>LUNCH</i>
<b>12:30-13:30</b>	<p><b>4. Techniques of Accelerated Stress Testing (AST)</b></p> <ul style="list-style-type: none"> <li>- Elevated stresses in revealing failure modes</li> <li>- Failure mechanisms as sources of failure modes</li> </ul>
<i>13:30 – 13:45</i>	<i>COFFEE break</i>
<b>13:45 – 16:00</b>	<p><b>5. Conditioning in AST</b></p> <ul style="list-style-type: none"> <li>- Test cycle planning to reveal relevant failure modes</li> <li>- Selecting the stresses, system vs. subsystem testing, functional tests</li> </ul> <p><b>6. Implementation of AST</b></p> <ul style="list-style-type: none"> <li>- Iterative approach to stress testing</li> <li>- Failure analyses, failure database and Lessons Learned</li> </ul>
<i>16:00 – 16:15</i>	<i>CONCLUSIONS, discussion</i>

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