

Life Data Analysis and Reliability Testing

Reliability
Foundation 1



New products and processes need to be developed more quickly than ever, with increasing quality and reliability requirements. Learn how you, as a reliability engineer, can predict the reliability of your product, set up test plans and make statistically-based recommendations to support fact-based management decisions.

Predict the reliability of your product based on field and test data!

Register: www.holland-innovative.nl

Integration with the product creation process

This training is based on the New Weibull Handbook. It addresses the Weibull and the Crow-AMSAA statistics as well as a number of reliability test methods that will seamlessly fit in the product creation process. Reliability-maintainability-safety (RMS) will be covered in all aspects, including specifying requirements, establishing risk analyses, evaluating test results at component and system level, calculating life cycle costs and maintenance strategy.

Course duration and number of participants 2 blocks of three days, from 9.00 am to 5.00 pm. Maximum group size: 18 participants.

Teachers Ing. Ronald Schop, senior director Reliability at Holland Innovative BV and Prof. Dr. Ir. Marc van Overmeire of the Vrije Universiteit van Brussel.

Location and costs Location: Holland Innovative, High Tech Campus 9, Eindhoven. The costs are €4.350,- (ex. VAT) per participant. This includes the 6 training days, a syllabus of the course material, the 'New Weibull Handbook©', SuperSMITH™ personal software license, Reliability TOOLS RVP© software, exercise book playtime©, excursion HALT / ALT laboratory, daily drinks and lunches. In addition, four times free participation in the Reliability User Group.

Dates, registration and more information See www.holland-innovative.nl under Academy, where you can also sign up.

Contact HI Team Academy, tel. +31 40 85 14 611, academy@holland-innovative.nl

A selection of the skills that will be learned

- Terms and definitions; reliability metrics
- Life data analysis with Weibull and other distributions
- Maintenance prediction and planning; optimal replacement point
- Modeling of repairable systems
- Small sample sizes; Weibayes analysis
- Considering test time versus costs; zero failure testing, sudden-death test, reliability validation planning, confidence growth
- Modeling of accelerated life tests (ALT)
- Reliability DoE's – design of experiments

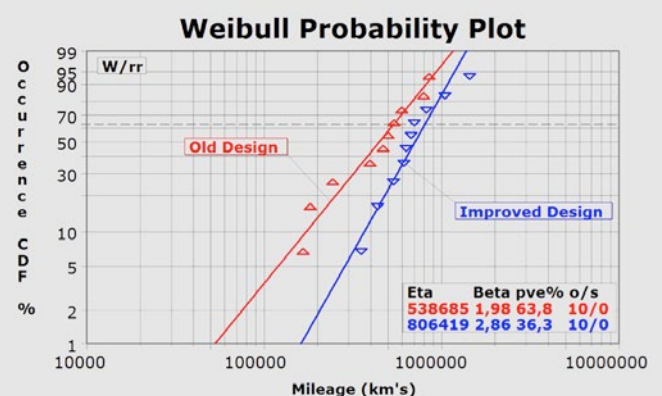
The focus will be on the practical application of methodologies of reliability analyses. For a more effective learning process, the training can be followed by a one year free participation in the Reliability User Group.

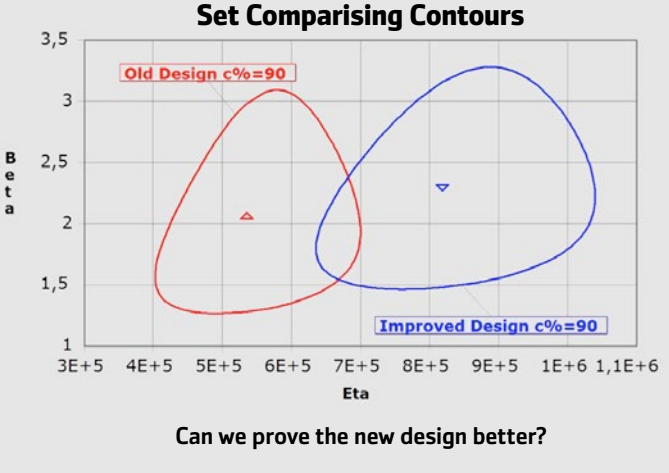
The aim and result of the training

You will be trained to become a professional life data analyst and reliability test engineer. You will be able to make in-depth reliability analysis based on warranty, test or field data, to predict the failure and to make fact-based management recommendations. In addition you can create a statistically robust test plan for the highest possible reliability at the lowest cost.

Target group

The course aims at professionals concerned with design, testing, warranty analysis, reliability, project planning, maintenance, or inspection.





Product leadership: Factor 10

What does it mean for your business if you can predict the quality during the life cycle of your product? Or if you can avoid product failures in the field and can improve your products with field data? If you can underpin service contracts and can control the use of spare parts? Mastering reliability methods and techniques is important in order to achieve a superior product quality. In this training, the factor 10 approach will be integrated in all subjects.

Level

University or college level, or equivalent level of knowledge gained through experience. Experience in analyzing data is an advantage.

Cooperation and certification

The Reliability Foundation Program is a post-graduate education, focusing on the practical aspects of Reliability Engineering. The program has been developed in accordance with VDI 4002

Program:

Block 1 / day 1-3

- Introduction, reliability terms and definitions
- Weibull Plot: create and interpret
- Goodness-of-fit, distribution analysis
- 3-parameter Weibull, log-normal distribution
- Risk analysis; failure forecasting
- Dauser Shift, zero failure and 'Sudden Death' testing
- Confidence intervals, batch analysis
- Binominal, Poisson, exponential, Kaplan-Meier
- Reliability validation plan, fully censored data
- Crow-AMSAA: reliability growth analysis

Block 2 / day 4-6

- Extended Crow-AMSAA; trend analysis
- Accelerated stress tests; HALT, FMVT, MEOST
- Accelerated Life testing; ALT
- Step-Stress tests, SN curves, PFEV, FUTR
- Modeling of Accelerated Life tests
- Establishment of a reliability validation plan
- Excursion to a HALT / ALT laboratory
- Introduction to DoE's, Design of Experiments

Reliability guidelines in collaboration with the University of Stuttgart and consists of several modules that will result into a VDI Reliability Engineer certification.



The Holland Innovative House: ■ ■ core ■ results ■ enablers

Holland Innovative BV:

- For solutions in project management, product & process development and improvement, and reliability
- 30 professionals with an experience level of more than 20 years
- Market areas: HighTech Industry, Automotive, Solar & Energy, Healthcare, Agro & Food

