**Reliability Evaluation: Turning NDT into a Financial Advantage with POD**

**Daniel Kanzler1, Vamsi Krishna Rentala1, Maximilian Selch2 and Nico Lehmann3**

1Applied Validation of NDT

Malplaquetstraße 14a Berlin

Germany

KanzlerD@av-ndt.com

2 Deutschen Zentrums für Schienenverkehrsforschung

3 Porsche Leipzig GmbH

ABSTRACT

What a thought-provoking idea! The prevailing notion is that non-destructive testing (NDT) is merely an expense. The notion which is uncovering the limits of NDT through Probability of Detection (POD) could yield financial advantages seems almost absurd.

This presentation aims to incorporate the reliability evaluation of NDT into the decision-making processes of management. It will illustrate why a simplistic cost evaluation may not always be feasible and how it is essential to consider the broader framework surrounding NDT, including standards, guidelines, and common sense. The evaluation will be grounded in the decision-making process, highlighting the concepts of Relative Risk-Adjusted Reward and Volume of Information.

In addition to the theoretical framework, the presentation will showcase as a first industrial case a railway application where reliability evaluation serves as an optimization tool for operational planning and maintenance. This case study will demonstrate the interconnectedness between different decision-making instances, emphasizing that reliability evaluation plays a crucial role in the future of highly critical applications.

Moving to the second industrial case, the discussion will delve into the perspective of the highly cost-driven automotive sector. It will explore why this sector, despite its focus on costs, is embracing reliability evaluation beyond the established concepts of aviation and aerospace. The presentation will underscore not only the success but also the necessity of reliability evaluation for the near future in various industries.

**Keywords:** POD, NDT, industrial application, Risk-based decision making