

- **Training for Operational Resilience Capabilities (TORC)**

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Abstract

Many industrial organizations experience that prevalent safety management approaches have reached an impasse, and that strictly compliance-oriented safety management schemes create problems by 'trapping safety into rules'¹ with respect to the potential of major accidents. Industries are therefore in need of support to transcend this 'glass ceiling' and develop adaptive capabilities, without sacrificing the benefits of prevalent approaches.

Resilience, described in the SAFÉRA T2 topic as a means of improving safety, is the main inspiration and navigator for the TORC concept which is designed to be a vehicle for sensitizing and developing resilience capabilities within organizations that also must accommodate the fundamental imperative of compliance to rules and regulations. TORC will accomplish this by developing a conceptual framework describing the possibilities, interactions and implications of resilience in 'compliance driven organisations' with a mature rule-based safety regime, and subsequently develop a framework for training interventions aiming for resilient capabilities. Hence, the TORC concept and framework is first and foremost directly applicable for organizations that seek to develop resilience in context (of compliance), and that recognise that these issues have to be pursued by a community of (sharp end) operators, a community of management, as well as their combined efforts.

Consolidation of resilience in context, devised in interaction with practitioners, will be a founding base for development of key TORC training issues. Specific training programs derived from the TORC concept and framework will be piloted in different industries in different European countries. The experiences from these pilots will be systematized with the purpose of facilitating a broader application and calibration of the expected effects of the overall TORC concept, e.g. in terms of justified confidence in resilience. TORC is a multi-disciplinary project encompassing researchers and experts of safety, organisational science, engineering, psychology and training development. In cooperation with industrial partners, exploratory case studies are used to test and evaluate the framework and gain experience from the training programs. Empirical evaluations of results from the case studies become input to the development of a revised TORC framework.

Bieder, C., Bourrier, M. (2013). Trapping Safety into Rules. How Desirable or Avoidable is Proceduralization?
Ashgate

SAF€RA proposal: TORC

Training for Operational Resilience Capabilities

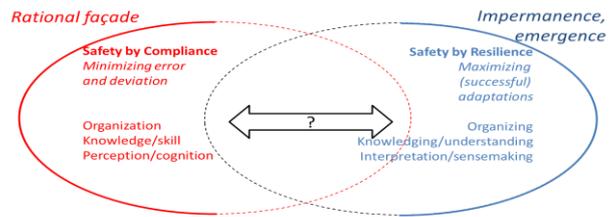
Model: *Resilience In Context*
Resilience Training Context
Resilience Training Framework

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TORC: Key points

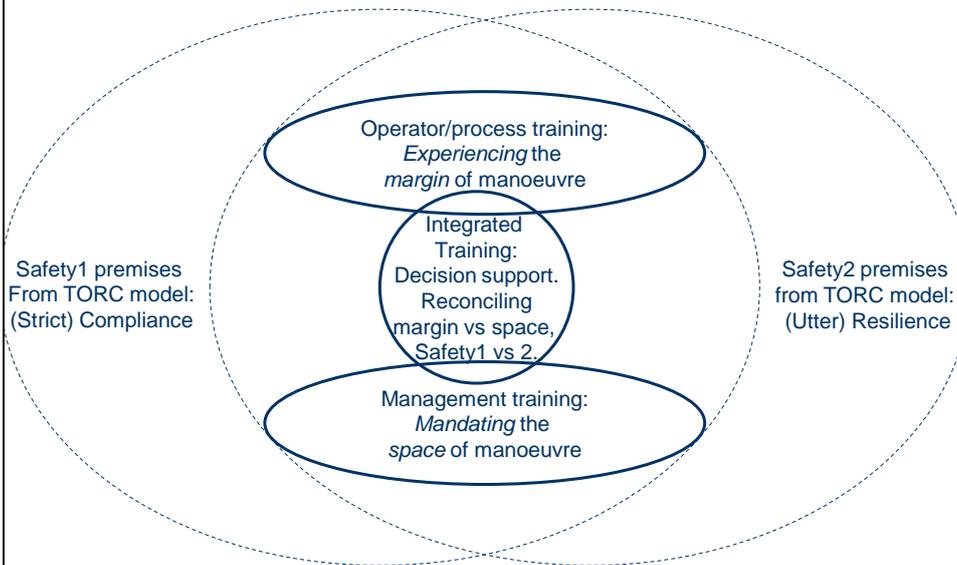
- TORC deliver innovative *training frameworks and methods* that facilitate sustained development and management of *operational resilience* capabilities that make safety management more adaptive and reliable under uncertain and shifting circumstances.
- The key research question: How can operational resilience capabilities be *created or reinforced through training activities* for managers and operational personnel, addressing everyday as well as emergency situations?
- The objective of *adding resilience as an operational capability* reflects the need for additional capacities to *manage variability and cope with surprise*, but also embodies the awareness of *resilience as a fallible practice*.
- The exertion and management of resilience can however not evade the *imperative of compliance* that pervades regulations, management styles and procedures in most industries.
- As resilience embodies an *alternative way of thinking* about safety, the adoption of resilience-based adaptive principles will create *friction*.
- Hence, reaching this target demands a continuous process of *reconciliation and reflection* that may *manifest differently* at the operational and the managerial level, and in which *TORC training is exercised on the basis of rules and procedures*.
- The most tangible outcome of the project will be the *TORC concept and the generic and validated training framework* that can be easily operationalized into practical and effective training programs.

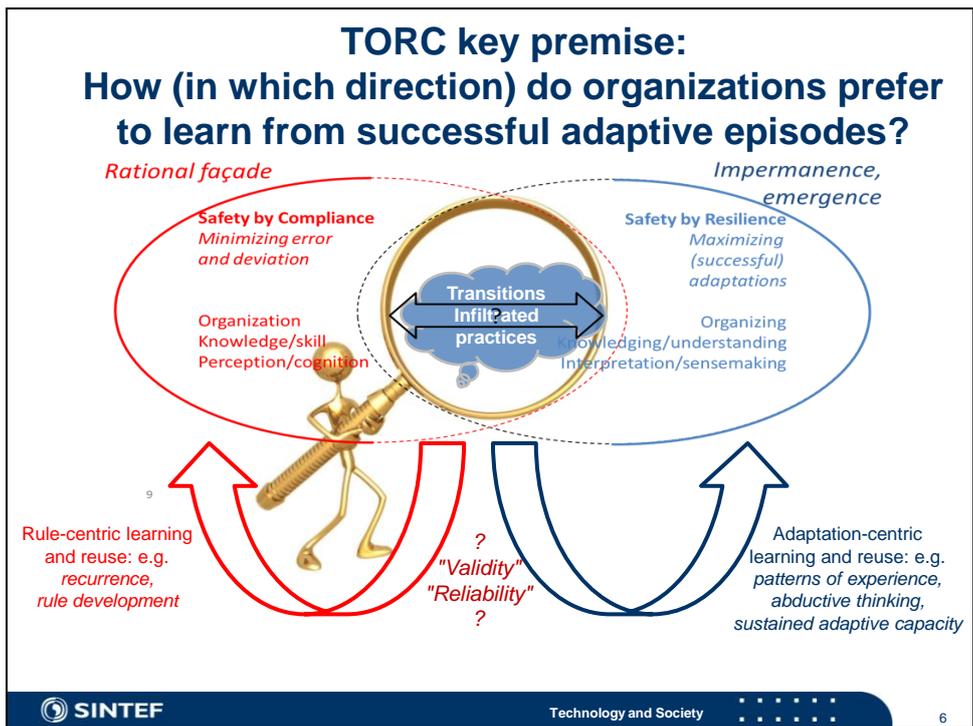
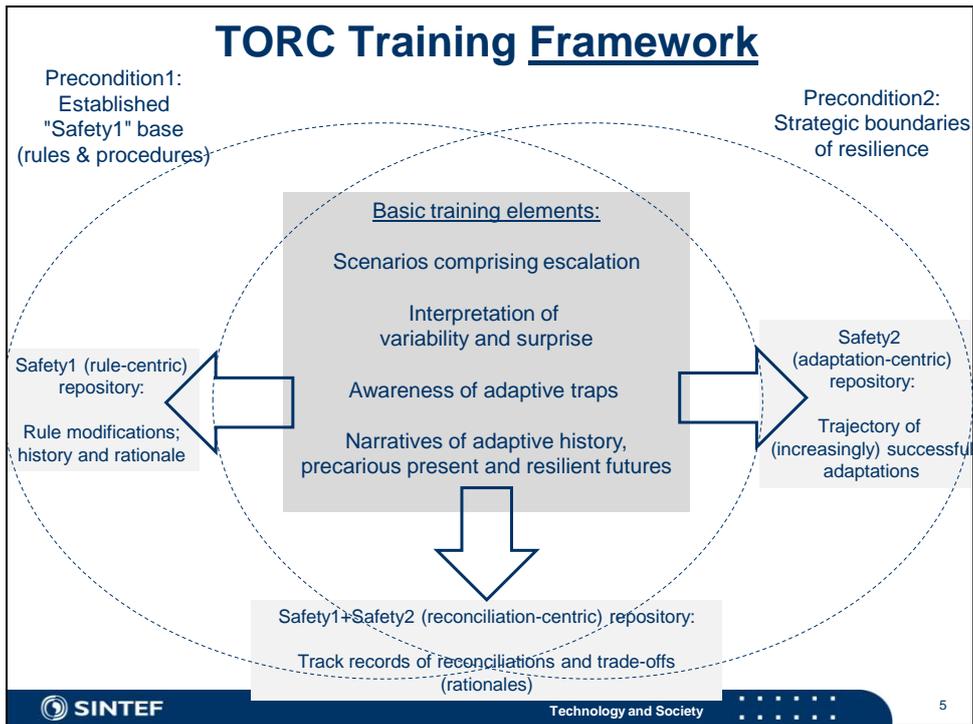
TORC: the model



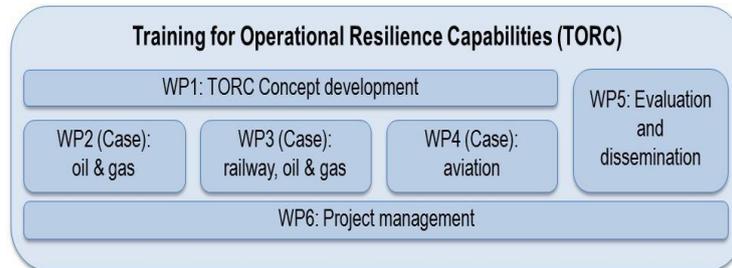
- Resilience?
 - Normal variability (normally not appreciated)
 - Unexpected events/combinations; (spectacular/visible) recovery
- Resilience in context (of Compliance)
 - "Safety 1" vs "Safety 2"
- A complementary relation (asymmetrical)
 - The *rational façade*; compliance as "the contextual shadow" for resilience
- A dialectical relation
 - Two opposing principles; rendezvous in the "intersection zone"
 - **Forging a margin of manoeuvre**; an extended safe envelope
- A shaping relation
 - Mutual, reciprocal; driven by the inherent dialectic
 - Biased learning? **Training?**

TORC Training Contexts Targeting the intersection





TORC project structure



- SINTEF (Norway)
- TNO (Netherlands)
- DEDALE (France)