

Delft, 22-24 October 2019

ASPECT 2019 ///

Institution of Railway Signal Engineers | Delft University of Technology | IRSE Nederland

Resilience

Prof. Dr. Rob M.P. Goverde, FIRSE
Digital Rail Traffic Lab
Department of Transport and Planning
Delft University of Technology
r.m.p.goverde@tudelft.nl

Delft, 22-24 October 2019

ASPECT 2019 ///

Institution of Railway Signal Engineers | Delft University of Technology | IRSE Nederland

Contents

- Delft University of Technology
- Railway traffic system components and interactions
- Resilience

Delft University of Technology

Founded in 1842 by King Willem II
as

*Royal Academy for the education
of civil engineers, for serving both
nation and industry, and of
apprentices for trade*



Delft University of Technology

Prometheus - *Forethinker*



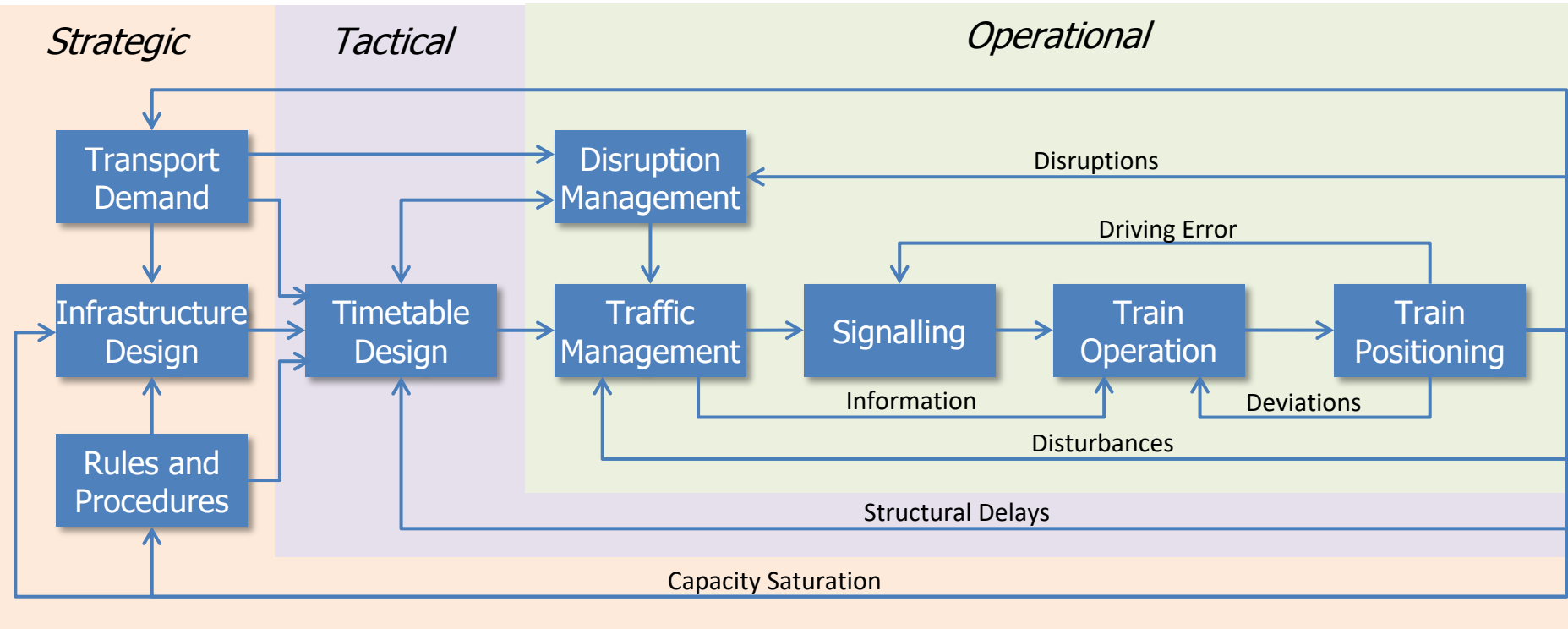
Delft University of Technology

- 8 faculties
- 2000 scientific staff, including 265 Professors
- 2800 PhD students
- 2000 support and management staff
- 25000 students
- 16 BSc programmes (3 years)
- 33 MSc programmes (2 years)
- 4 PDEng programmes (2 years)
- 150 online courses

Faculty of Civil Engineering and Geosciences



Railway traffic system components and interactions



Resilience

- **Resilience**
 - The ability to maintain state awareness and an accepted level of operations under both expected and unexpected conditions
- Traditional **safety management** (negative)
 - Reduce the number of adverse outcomes by preventing adverse events
- **Resilience Engineering** (positive)
 - Enhance the ability of systems to succeed under varying conditions
- Four **basic potentials** for resilience (Hollnagel)
 - Responding
 - Monitoring
 - Learning
 - Anticipating

ASPECT 2019 ///

Institution of Railway Signal Engineers | Delft University of Technology | IRSE Nederland

- 97 abstracts submitted
- 54 papers in programme
- 7 reserve papers

- Paper and program committee: 5 persons
- Reviewers: 10 persons

