Panel 1
Specification and verification of energy consumption

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Scope of TecRec 100_001

- Definition of a harmonised procedure for
  - specification
  - and verification
  of the energy consumption of railway rolling stock during the procurement process
- Agreed by rolling stock manufacturers (UNIFE) and railway operators (UIC)
- Including aspects of
  - rolling stock
  - infrastructure
  - operation
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5, 6  Definition of infrastructure and timetable (purchaser)

7  Simulation of energy consumption (manufacturer)

8  Verification by measurement on the same railway line (during type tests)
5 Infrastructure data

Real infrastructure data;
- Power supply system
- Height profile
- Speed limits
- ... etc.

Responsible:
- *Infrastructure owner*
  (via train operator)
Operational requirements

Operational data:
- Timetable
- Payload
- Driving style
- Regenerative brake
- Comfort functions
- Parked trains

Responsible:
- Train operator
Simulation:
- Speed profiles
- Running time
- Energy consumption for train runs
- Energy consumption of parked trains

Responsible:
- Rolling stock manufacturer
8 Verification

Test runs for:
• Comparison between simulation and reality
• Measurement of parked trains

Responsible:
• Rolling stock manufacturer

Confirmation:
• Train operator
„Part A“ and „Part B“

- TecRec 100_001 can be used in two different ways:
  - **A**
    - Real railway lines and timetables
    - fully ready today
  - **B**
    - Standard profiles (similar to automotive industry)
    - annex includes profiles; future fine tuning may be necessary
Conclusions

- TecRec 100_001 is (in our view) the future de-facto standard for handling energy consumption in rolling stock procurement processes
- It takes into account all relevant aspects of railway operation (also parked trains)
- We encourage you to apply TecRec 100_001!
- Give feedback about your experiences to UIC and UNIFE
- A „user workshop“ may be planned in 2011