

The *REGINA* Gröna Tåget Test Train

Jakob Wingren, Bombardier

REGINA X9062 – the test bench for new technologies

2007



2007



2010



2009

BOMBARDIER

Gröna Tåget
www.gronataget.se

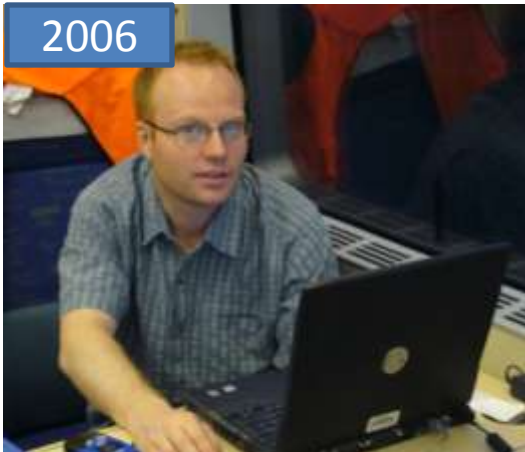
Managing the test bench *REGINA* Gröna Tåget

- Plan and lead rebuild and modification of the vehicle
- Plan and co-ordinate the tests
- Apply for test acceptance by Banverket /Trafikverket
- Apply for vehicle approval by Transportstyrelsen
- Prepare the necessary documentation for above activities
- Manage the day to day business during test
- Assure personal safety during on-track tests
- Supply the train with food and beverages
- Re-plan...



Test managers 2006-2010

2006



Johan Palm

2008



Olaf Kämmerling

2010



Daniel Jansson

2007



Christer Högström

2009



Jakob Wingren

2010



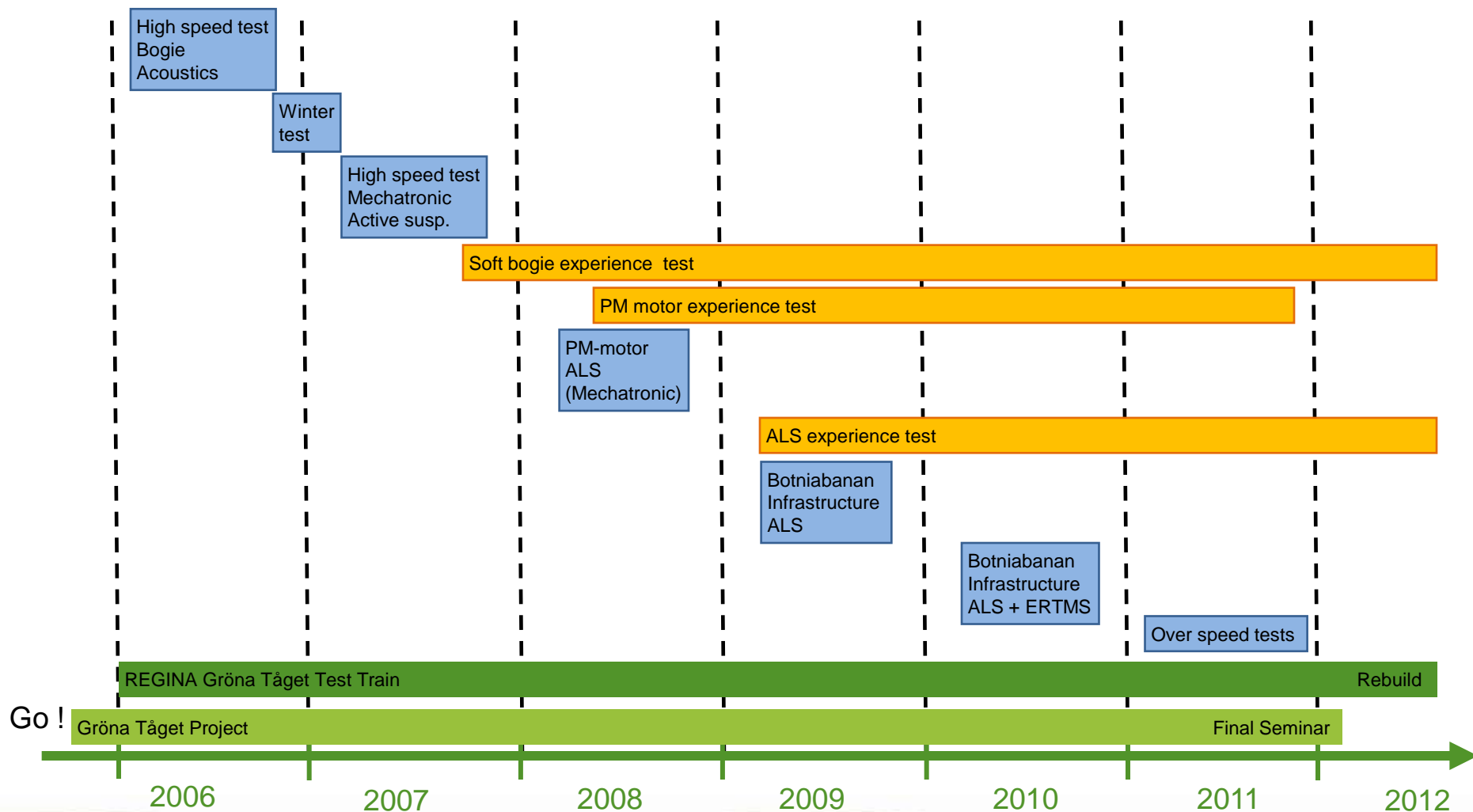
Christina Larsson

Products and technologies tested

- Track Friendly Self-Steering Bogie
- Active Lateral Suspension, ALS
- Permanent magnet motor
- High-performance current-collecting pantograph
- Aerodynamic measures
- Acoustic measures



REGINA Gröna Tåget test train



Mayor achievements

- UIC518 approval of Track Friendly Self-Steering Bogie, for 250 km/h and 1,2 m/s²
- UIC518 approval of Active Radial Steering, for 200 km/h and 1,1 m/s²
- Swedish speed record 303 km/h
- Swedish speed record in tunnel 289 km/h
- Verification of ALS performance
- Successful revenue service - no stopping failures:
 - Track Friendly Self-Steering Bogie with ALS - still ongoing
 - PM-motors finished with 505 000 km





BOMBARDIER

Gröna Tåget
www.gronataget.se

Thank You for Your attention

Jakob Wingren, Bombardier