

Lessons learned from the ePilot a railway development and innovation project



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Performance in Cold & LTU

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19th Nordic Seminar on Railway Technology



ePilot119 Objectives

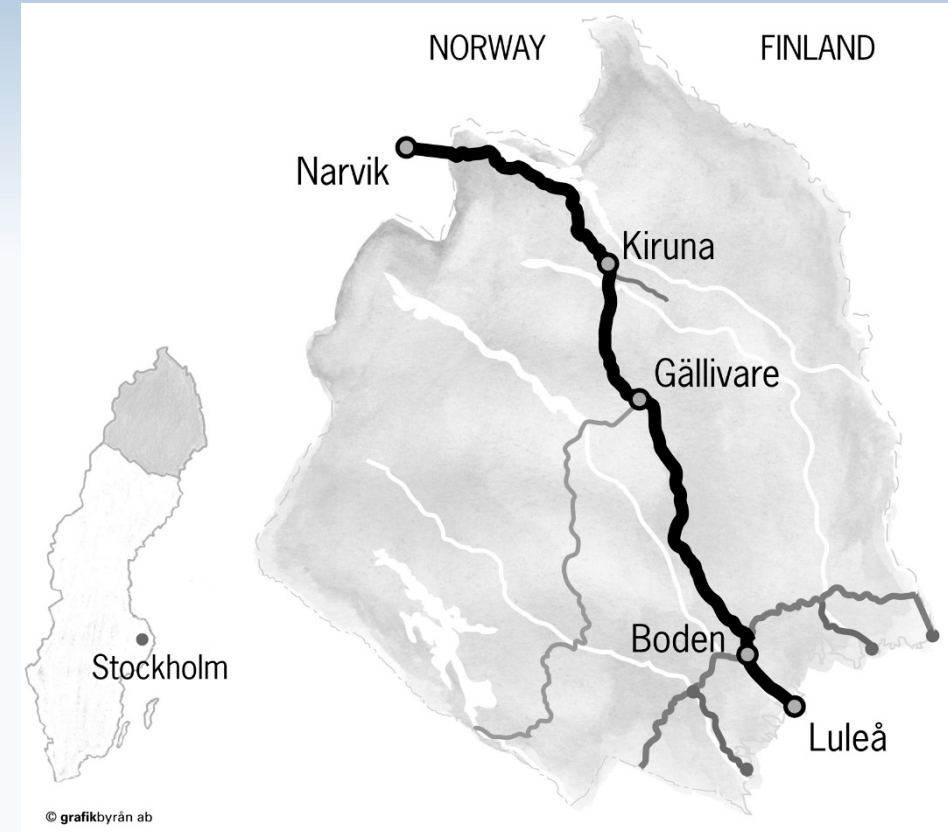
To implement results from research and development into the Swedish Rail:

To improve the transport system towards:

- higher availability,
 - Fewer and shorter interruptions
- increased capacity
- cost efficient
 - More effective and efficient maintenance
- Improved quality

ePilot119

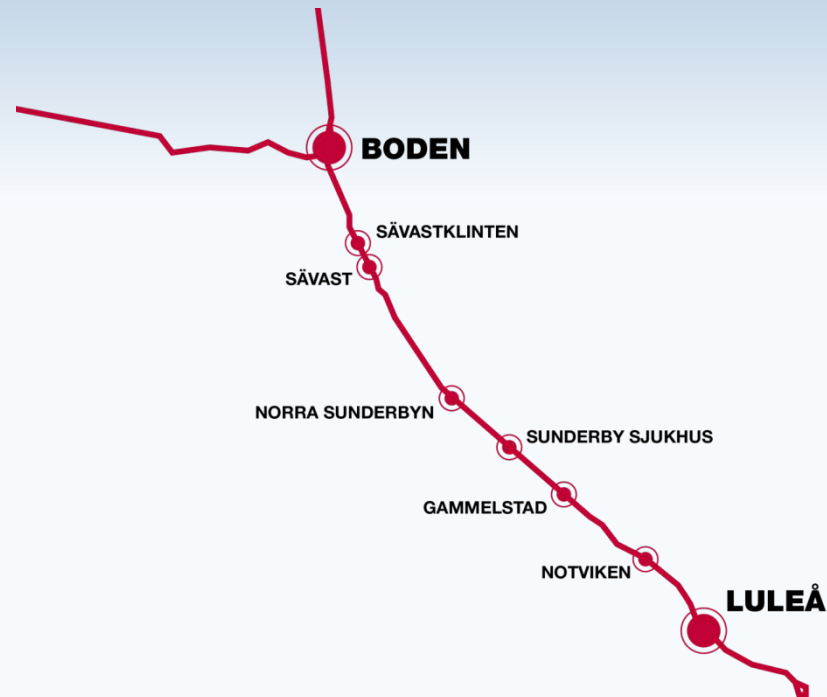
- Duration 3 year, 2013-2016
- Sponsored by Trafikverket
- Invites all parties involved in the operation and maintenance of the railway section Boden - Luleå,
- JVTC acts as facilitator and provide the platform and the Railway cloud.





Section 119

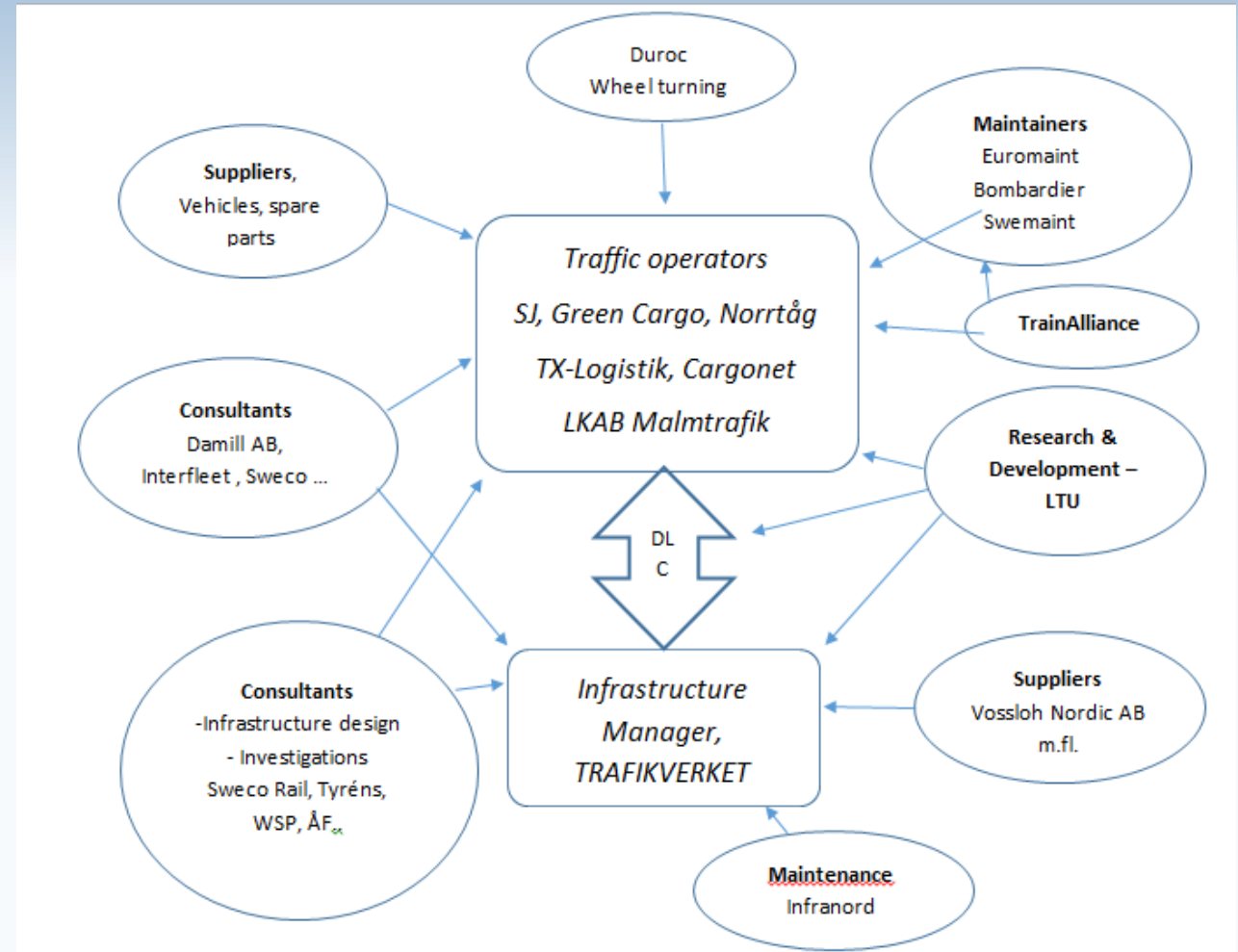
- 34 km long single track with six meeting stations
- Mixed traffic
- 23 MGT/year
- 40 - 50 trains/day
- ore trains with an axle load of 30 tonnes,
- freight trains with axle loads of 22.5 – 25 tonnes
- passenger trains.
- 50 km/h for loaded ore trains up to 140 km/h for the passenger trains.



Parties involved

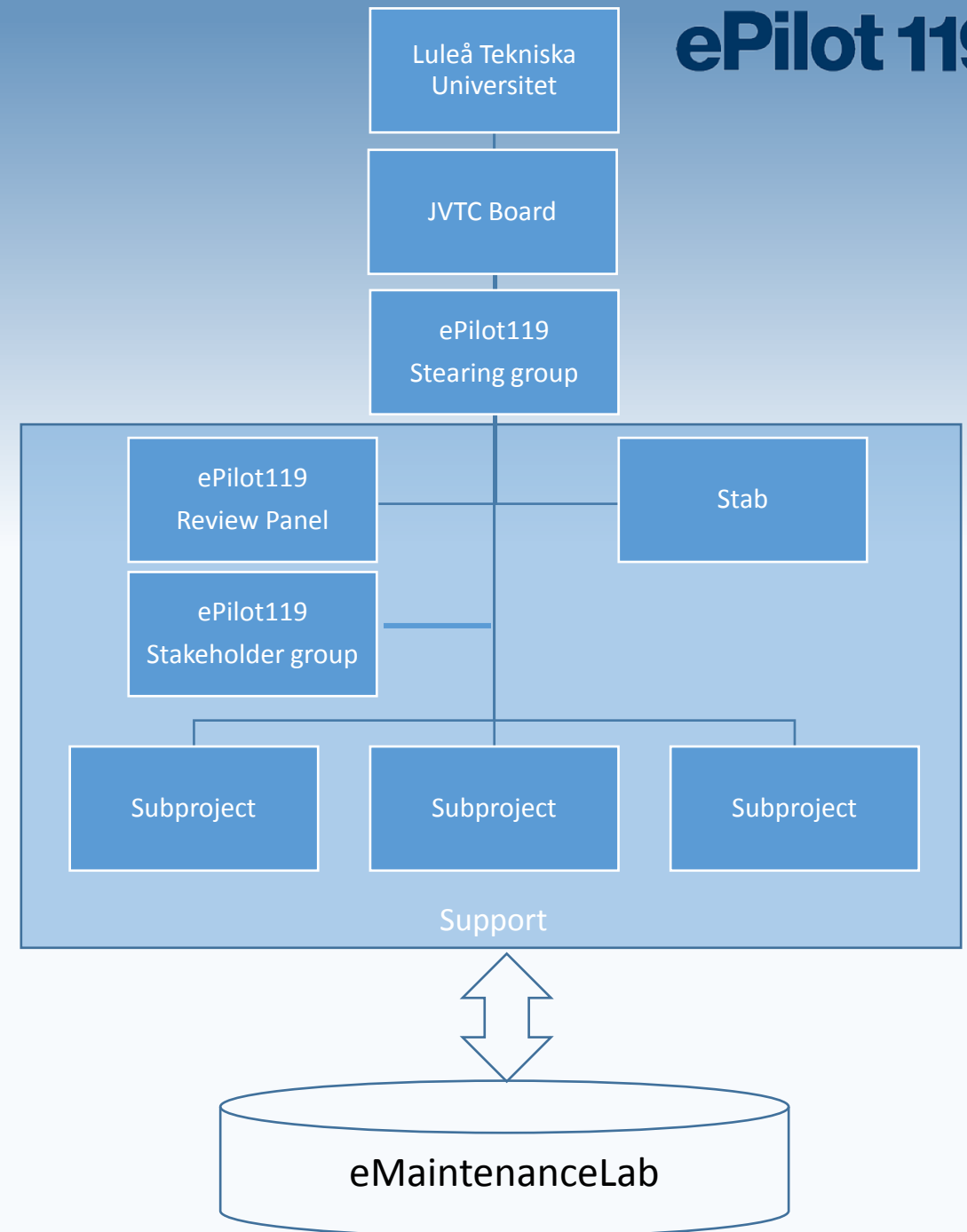
- Infrastructure manager,
- Traffic operators,
- Maintenance contractors for vehicles and infrastructure,
- Suppliers and
- Consultants
- Academia

With different requirements for collecting data for maintenance decision support.



Organisation

- A consortium with a Support Group that acts as neutral facilitator,
- The tasks for the sub-projects and their sub-project-leader are to drive the improvement work and implement the results amongst appropriate parties in the railway system





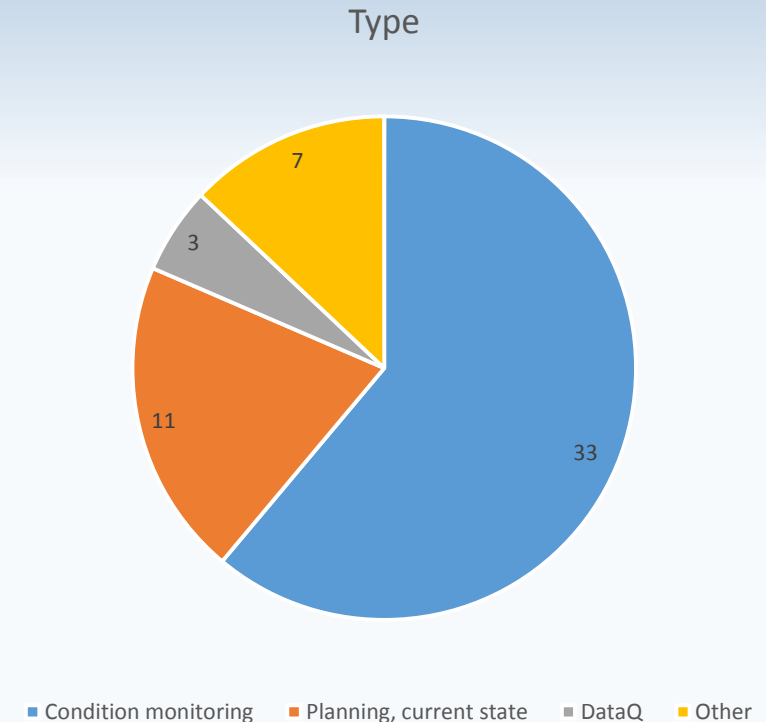
ePilot119 Corner stones

- Enhanced and open collaboration amongst all involved parties
 - a common desire for reaching the objectives
 - a holistic approach
- Neutral platform,
 - JVTC Member agreement and
 - Delegation of authority
- Framework with “play” rules
 - A special process manual, a guidance for immaterial properties and ownership of data
- eMaintenance system for integrating access to a central computerised data analysis carried out in line with both the customer and the supplier's business goals.



Results

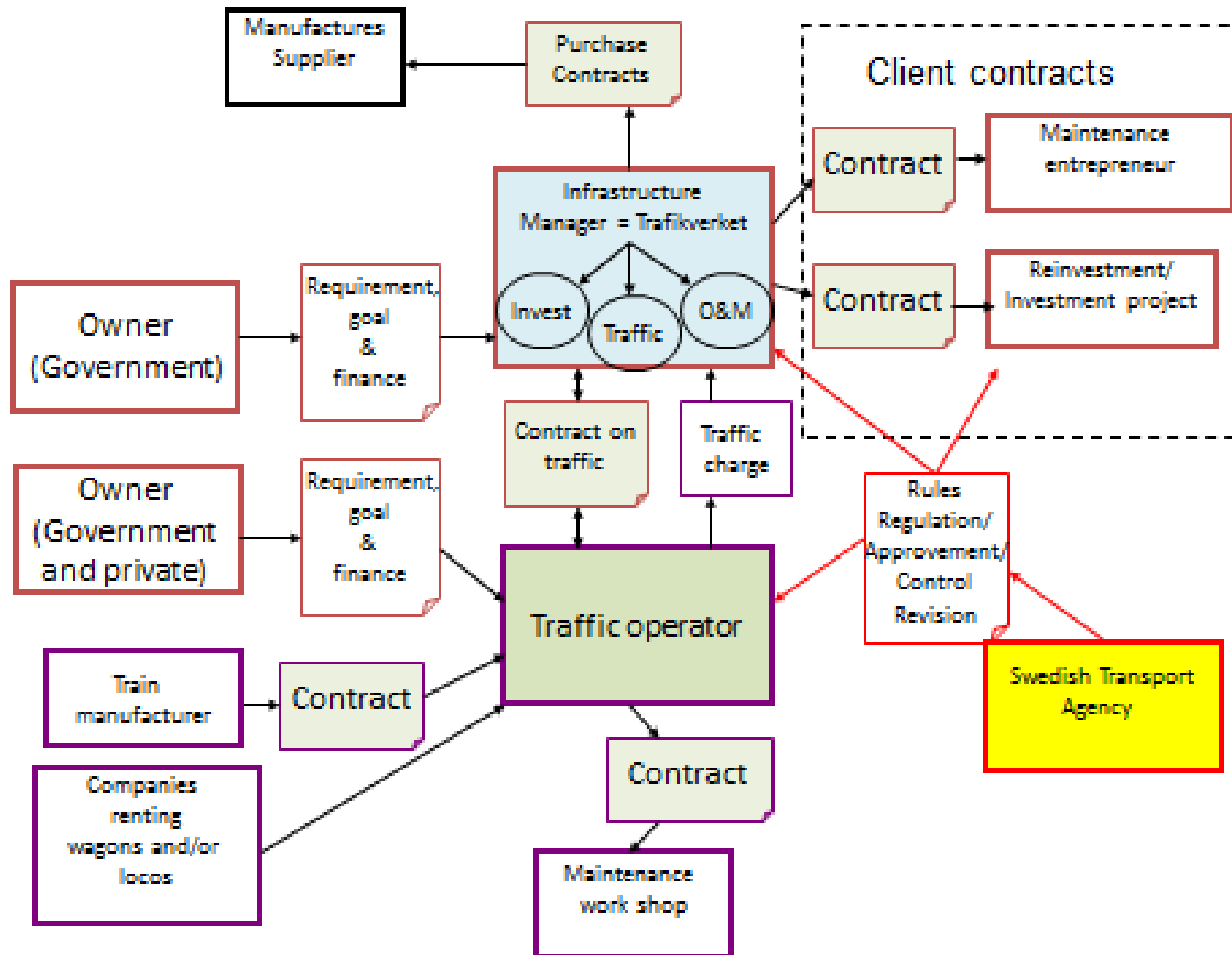
- 54 project ideas (23 started, 11 completed and 12 ongoing) - *focused on solving problems for train operators, infrastructure managers, maintenance contractors and suppliers.*
- Benefits of an open collaboration, all sub-projects has involved at least three parties
- Important to present the benefits, potential and bringing the participants together “on the same train”.
- Data sharing e.g. way side monitoring equipment, mobil monitoring equipment, maintenance history, inspection remarks etc.
- building up an advanced and integrated platform for utilization of advanced information technologies in three sub-projctet and in eMaintanecesLAB

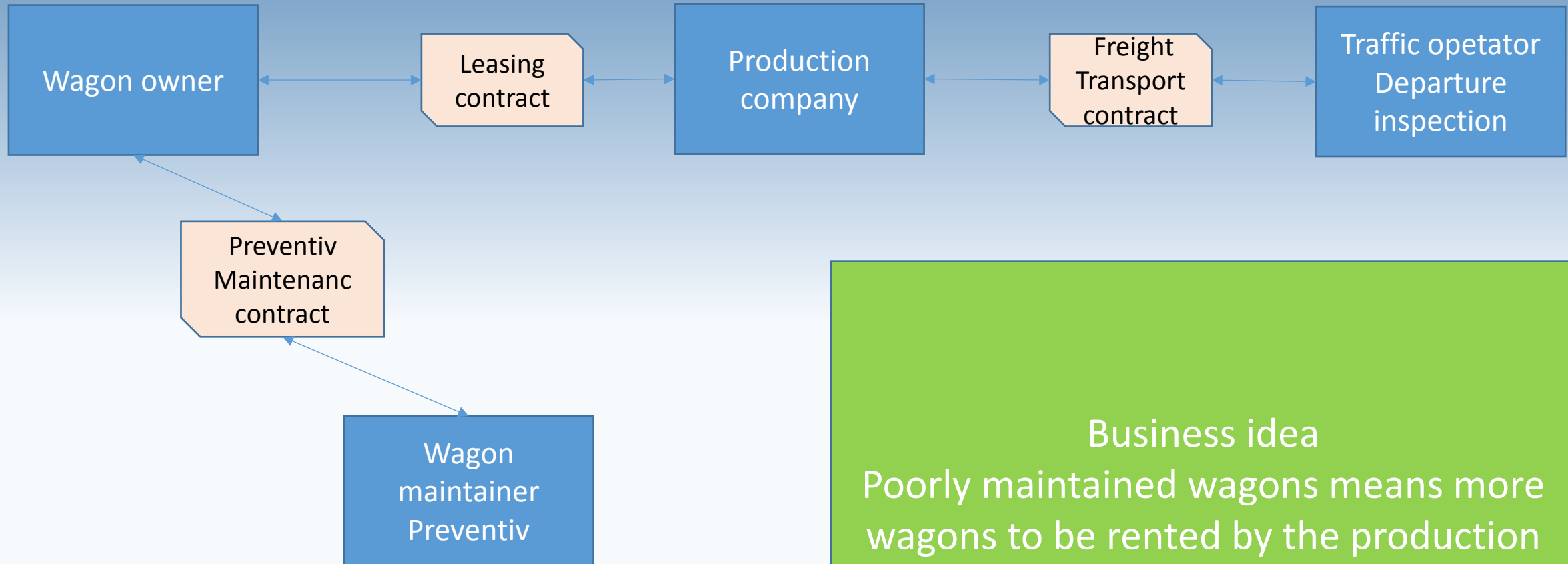




Results

- Hindrance for implementation:
 - internal agreements amongst different parties, making it unclear who's responsible for the maintenance activities or lack of incentives or demands.





Business idea
Poorly maintained wagons means more wagons to be rented by the production company, which will provide more revenue to the wagon renter

Results

Other obstacles:

- Rules and regulations. Takes time to implement an innovation, permission from the Transportstyrelsen/Transport board
- Quality of the data supplied is not always reliable, e.g. incomplete calibrating, which has led to new procedures and methods have been developed to assure the quality of data, and clear the corrupt data that existed in the data / cloud.
- Another lesson learned is the difficultness to find resources for conducting the work, due to slim organisations.



Conclusion

- The collaboration between the parties involved are regulated in contracts, often without incentive and some time without objectives to deliver available and safe railway transports.
- Need for more collaboration, exchange of information and data
- ePilot119 has provided an industry-common platform facilitating collaboration.
- Test sites / test organisation
- eMaintenance clouds
- Further research remains to convert the current maintenance data into correct data for maintenance decision.



**Thank you for listening
and
Welcome to**

**Resultatkonferens:
Luleå 14 feb 2017
Stockholm 21 feb 2017
Borlänge 22 feb 2017**

Questions?