

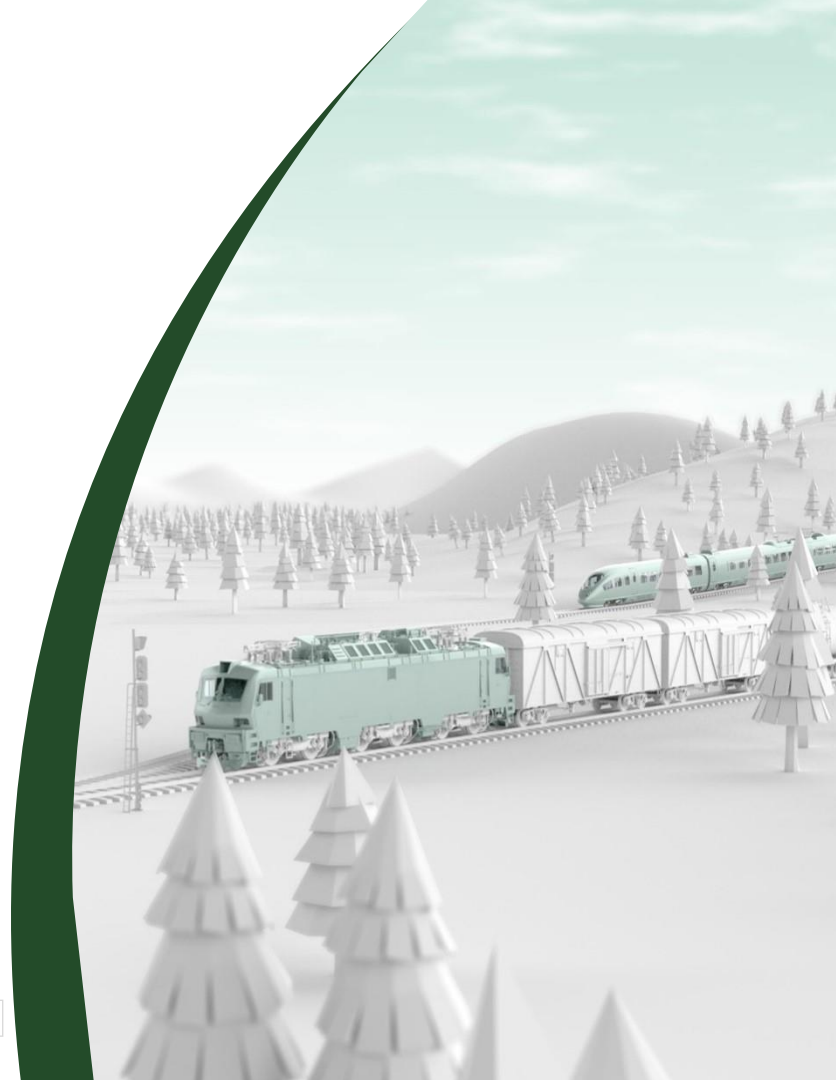
Press EMS & DAS Day

GreenSpeed -
Driver Advisory System



CUBRIS

GTS GROUP CONFIDENTIAL



GreenSpeed by Cubris – a Thales Company

In short

As you probably know Cubris is one of the leading suppliers of Driver Advisory Systems.

DAS and especially C-DAS benefit the railway eco-system and customers to GreenSpeed span RUs, IMs, and TBs.

Standardization of “SFERA” real-time data from TMS/OCC will reduce cost, improve benefits, and facilitate DAS interoperability.

C-DAS is considered ATO GoA1 and will on many secondary networks remain the most viable platform to be on.

Higher GoA levels offers even higher utilization of infrastructure capacity and improved train service, and the speed optimization algorithm used by GreenSpeed is also at the core of the joint ATO development with Thales.



Topics suggested by Claudia:

- Energy efficiency & your system (how does your system help the world to be a better place?)
- Diagnostics / extracting data from your system + any other extra functionality
- Delivery time of your EMS or/and DAS system
- Estimated lifetime & how often does it need to be recalibrated?
- Accuracy & reliability & latest innovations

How does GreenSpeed help the world to be a better place?

Word from Transdev in Sweden



Diagnostics / extracting data from GreenSpeed

Every second all GreenSpeed on-board client send back small data packages with position, speed, ETA + timeliness at passage points, arrivals, and departures.

In addition, a Delay Attribution functionality request drivers to provide GreenSpeed with reasons for delays.

Aggregated data is available in reports and dash boards via the web based GreenSpeed BackOffice and gives stakeholders like management and planners documentation for targeted operational improvements.



Delivery time of GreenSpeed

3-6 months if relevant data, of good quality, and in standard formats is easily assessable.



Estimated lifetime & recalibration need of GreenSpeed

Any GreenSpeed delivery comes with an SLA (Service Level Agreement) for support and bug fixing.

The license fee payable for using GreenSpeed ensures customers to always have the best and last version of GreenSpeed.

Regarding recalibration, we are working on automating this (AI).

Lifetime: Indefinite or until ATO.



Accuracy & reliability & latest innovations of GreenSpeed

The **accuracy** of GreenSpeed is as high as it gets.

The algorithm is performed on-board (DAS-O) based on real-time position and speed of the individual trains.

The **reliability** of GreenSpeed comes down to the data available.

We always do what we can to ensure best possible data quality as DAS will suffer from anything less.

If the input data is flawed, the output of the algorithm will be too, and drivers will lose trust in the system.

Innovation is constant with both self-funded and customer-driven R&D.

- How to best operate battery hybrid trains regarding charging cycles and battery lifetime while of course respecting punctuality (1st priority) and maximizing eco-driving (2nd priority).
- Low tech ATO (GoA1,5) in the form "Automatic mode" (advanced cruise control).
- Elaborated train characteristics for more accurate energy modelling.

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Bonus info

The UK CMA (Competition and Market Authority) has October 4th approved the acquisition of Thales GTS by Hitachi Rail and the European Commission is expected to give their blessing November 6th.

Hitachi – here we come!



Thanks for your attention

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