

Driving the future of **signalling**



SUMMARY

1. **The CAF Group**
2. **Company Profile**
3. **Product Lines**
 1. QUASAR S4e - Electronic Interlocking
 2. AURIGA - ERTMS level 1 and level 2
 3. NAOS - Integrated Control Centres
4. **Int'l Presence & References**
5. **Current projects**
6. **railML**

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1. The **CAF** group



- Born in 1917, **CAF** is today a global leader in the design and supply of solutions for the railways industry
- Experience in more than **30 countries** around the globe
- Revenue reached **1.725 million Euros** in 2011



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2. Company Profile



Develops signalling solutions relying on:

- Safety-critical systems
- Continuous R&D

International Associations Membership:



Collaboration with greatest research programmes:



Following the highest international standards:

- ISO 9001 – Quality Management
- ISO 14001 – Environmental Protection
- UNE 166002 – R&D&I
- OSHAS 18000 – Health and safety management systems

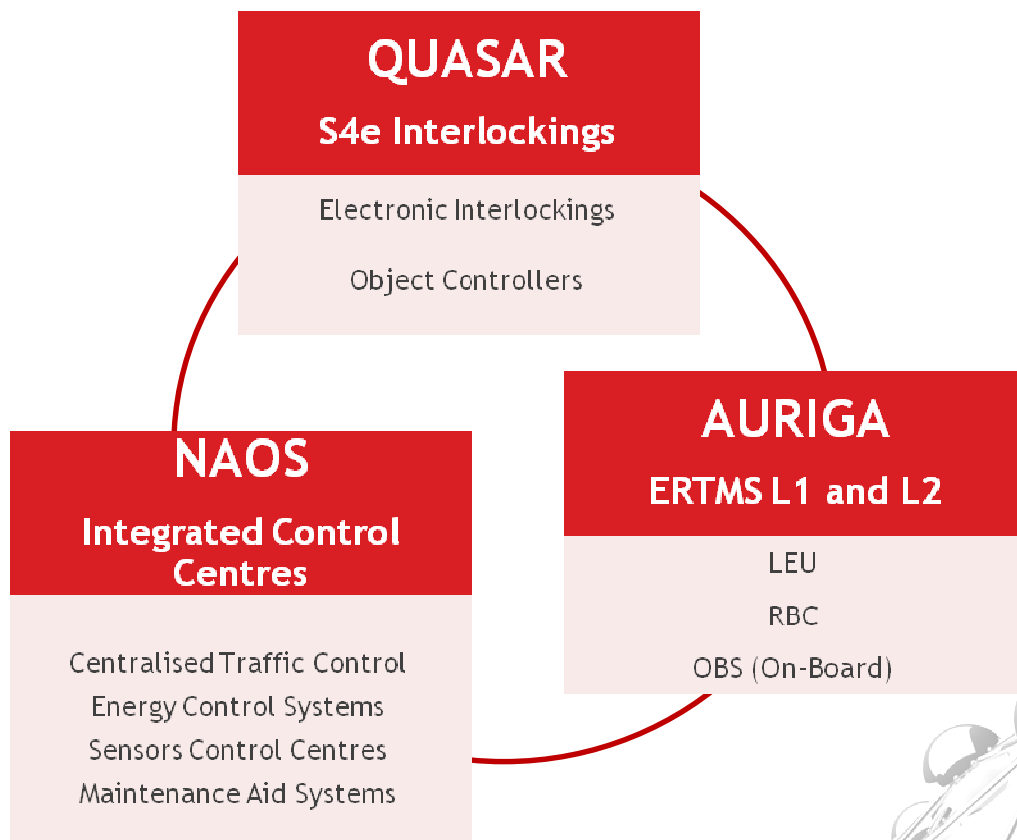


Licensed Equipment Supplier

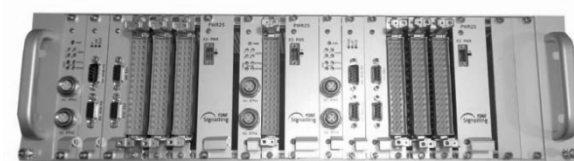
Founded in 1979, **CAF Signalling** undertakes turn-key railway signalling projects with recognition from administrations over Europe, America, Africa Middle East and Africa

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3. Product Lines



Quasar S4e



Auriga



Naos



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4. Int'l Presence & References



Spain



metro bilbao

International



CHILE



BULGARIA



TURKEY



EGYPT



PERU



TURKEY



CHILE



MOROCCO



दिल्ली मेट्रो रेल कॉर्पोरेशन लिमिटेड
DELHI METRO RAIL CORPORATION LTD.

INDIA

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4. Int'l Presence & References



BRANCHES/ SUBSIDIARIES

Morocco



Turkey



Spain: ADIF, RENFE, FEVE...



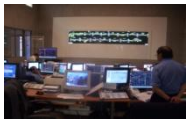
Bulgaria: NRIC



Morocco: ONCF



Turkey: TCDD, Antalya



Chile : EFE, Merval



India: Metro Delhi



Brazil: MATO GROSSO Government



Egypt: ENR



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5. Current Projects



1 Pehlivanköy-Hudut: **TURKEY**

- S3e interlocking
- Local control rooms
- CTC equipment to control the line section
- Trackside equipment : point machines, level crossing, track circuits



HSL - Albacete Alicante: **SPAIN**

- CTC
- ERTMS – level 2
- HSL Interlocking
- SWD- side wind detectors
- CSD – concentrator of security sensors

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3 Vidin – Calafat: Border **BULGARIA** & **ROMANIA**

- Combines 2 different national systems
- Interlocking
- ERTMS L1
- Complete line side Signalling for freight and for passengers



Casa Port Station: **MOROCCO**

4

- Complete signalling solution
- Adaptation to Moroccan's functionality
- Complete Quasar 24e
- Local and remote control system
- Track side equipment
- Block system with the neighbouring yards and blocking sections

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5 Cuiabá VLT (light rail): **BRAZIL**

- QUASAR S4e interlocking
- Local and remote control
- Trackside equipment: point machines, signals, pedestrian crossings, balises...

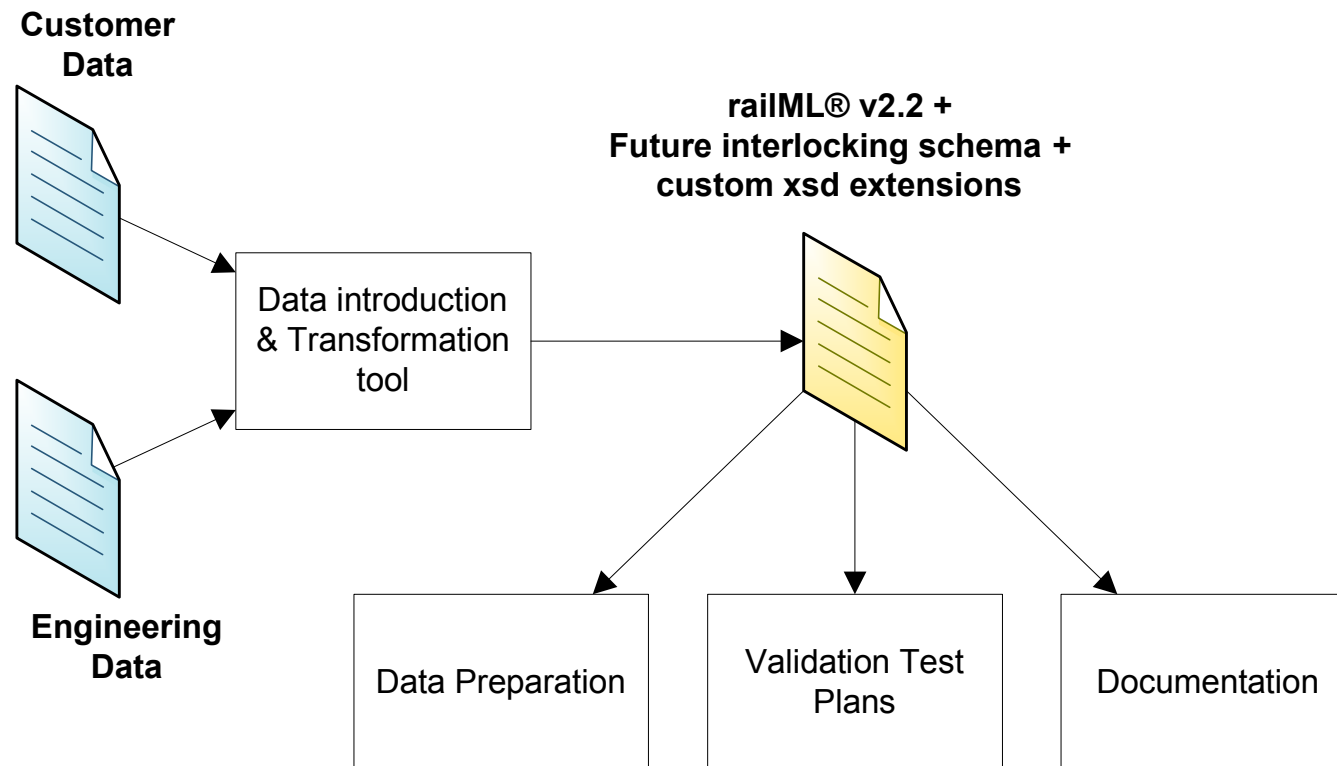


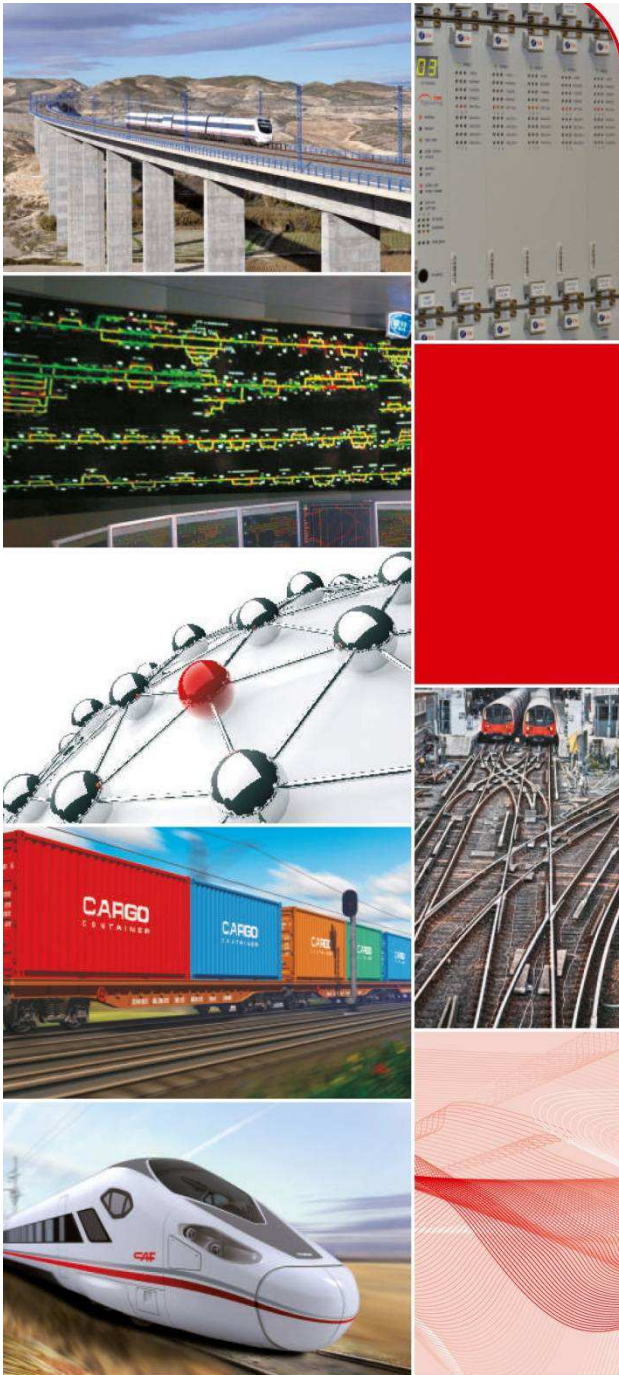
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6. Why railML?



- CAF needs a Railway Data Model like railML[®] for:





Motivation and current state at CAF Signalling

railML® Interlocking Meeting
UIC – Paris, 19th of September 2013

Ing. José Antonio Quintano
CAF Signalling



Issues

- **CAF Signalling highlights**
- **Why is CAF Signalling interested in railML®?**
- **What information does CAF Signalling need?**
- **How do we currently store our information?**
- **How can CAF Signalling contribute to railML® interlocking development?**

CAF Signalling highlights

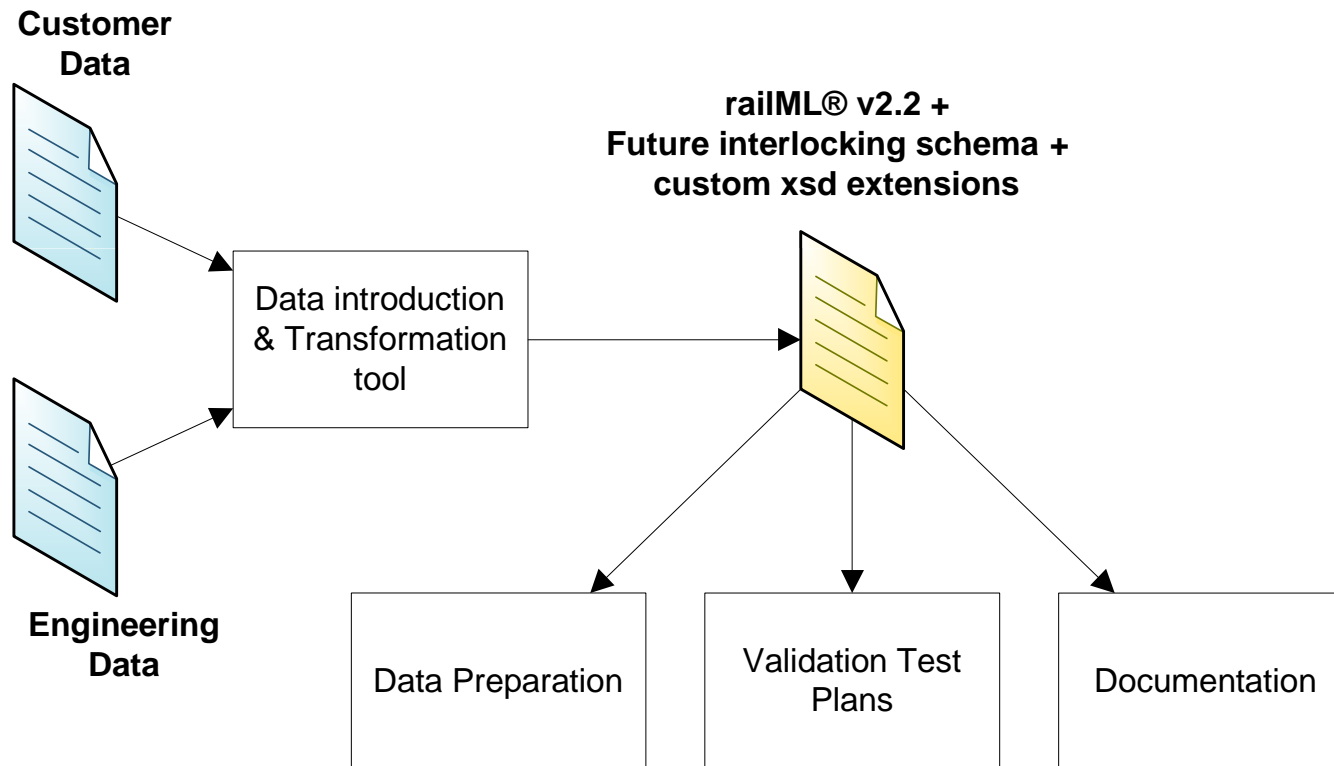


- **CAF Signalling** is devoted to the development, design, manufacture and maintenance of railway signalling systems, providing integral signalling solutions for wayside and onboard applications, both in Spain and internationally.
- Members of the UNISIG consortium.
- Formerly participant of the INESS project where railML was chosen as the basis for an European Unified Description of Railway Infrastructures (EUDRI).
- <http://www.cafsignalling.com/references.htm>
- CAF Signalling principal products:
 - Interlocking
 - LEU
 - RBC

Why is CAF Signalling interested in railML®?



- We need a Digital Railway Data Model like railML® for:



What information does CAF Signalling need?



- Railway Infrastructure data
- Graphical representation
- Routes
- Interlocking concepts
- ERTMS L1 & L2 concepts



How do we currently store our information?



■ Several data preparation and test tools use:

- DB
- XML files
- Custom data format in electronic files coming from customers



How can CAF Signalling contribute to railML[®] interlocking development?



- **CAF Signalling is interested in the development of this schema and can contribute by:**
 - Review of existing features
 - Proposal of new features
 - Review of the elements and attributes design and documentation in schema
 - Contribute to documentation
 - Proof of concept: as we plan to use the interlocking schema, we will discover whether it suits our internal datamodel or not, proposing modifications when needed.

