

METRAUT

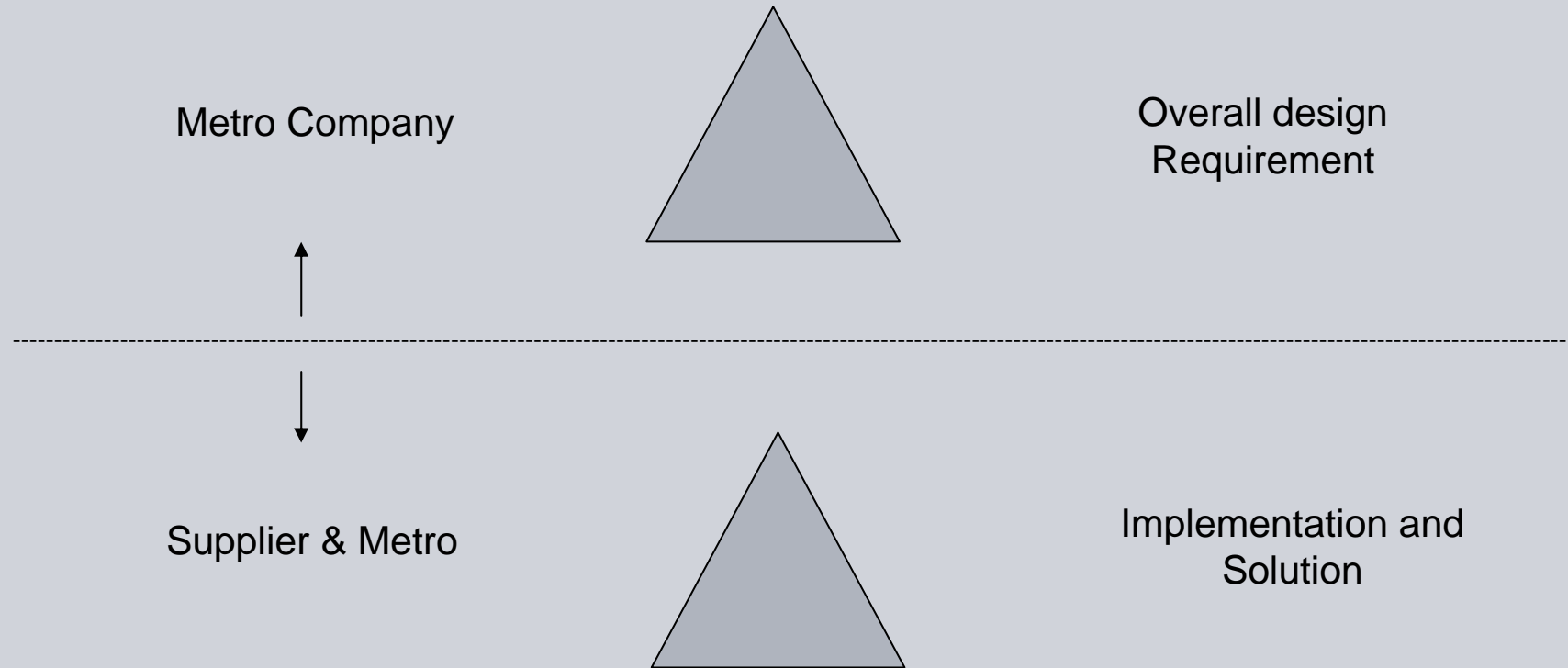
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Driverless design and implementation: few topics

Dr Gérard Yelloz

Fellow of the Institution of Railway Signaling Engineers
SIEMENS TRANSPORTATION SYSTEMS

A top down design and not bottom up




Specified and not only performance contract by avoiding design build type

Driverless concept needs to be carefully adapted

Each driverless design and system is:

- Country specific
- City specific
- Metro company specific

because

- standards to be applied
 - operation tradition
 - passenger behaviour
 - objectives to be reached 
- Cost saving
 - Transport capacity and performance
 - Unions
 - Quality of service

Must have for proper driverless requirement and implementation



- Operation principles → in the tender
- Degraded trades of operation → in tender and detailed after
- Validation process → activity to start at day one
- Core system Test Track with signaling, Train, ATS, Telecoms:
 - for first level integrated test
 - for validation before site implementation

The best way to mitigate risks during site test in particular for line renovation into driverless

Team work at design stage as at implementation is necessary



- Joint work between
 - Operation
 - Designers
 - Maintenance
 - Suppliers
 - Construction
- Prepare the operation staff to get the system accepted
- Integrated scheduling on a weekly basis
- Working group for each subject

Particular attention

- Safety starts from day one until opening (plan + risk + certification)
- Interface management : always one must be the designated leader among the others
 - but
- all system-wide contractors are liable
- Finalize system requirements early
- RAMS demonstration
- Data flow and response time
- OCC and automated or semi automated scenarios in degraded modes
- Migration Plan: what the plan was before construction start is never what will be done in reality
- Implement as many as possible remake diagnostics and controls

Solution providers for train control

« all signaling company are bad, some are a bit better than the orthers »

So,

- Experienced contractors
- Field-proven product, as much as possible
- Minimize software development
- Assessment of customization level