

# Business customising APIs

## Keeping the link to standards

35<sup>th</sup> UN/CEFACT Forum, Virtual

Andreas Pelekies

andreas.pelekies@gefeg.com

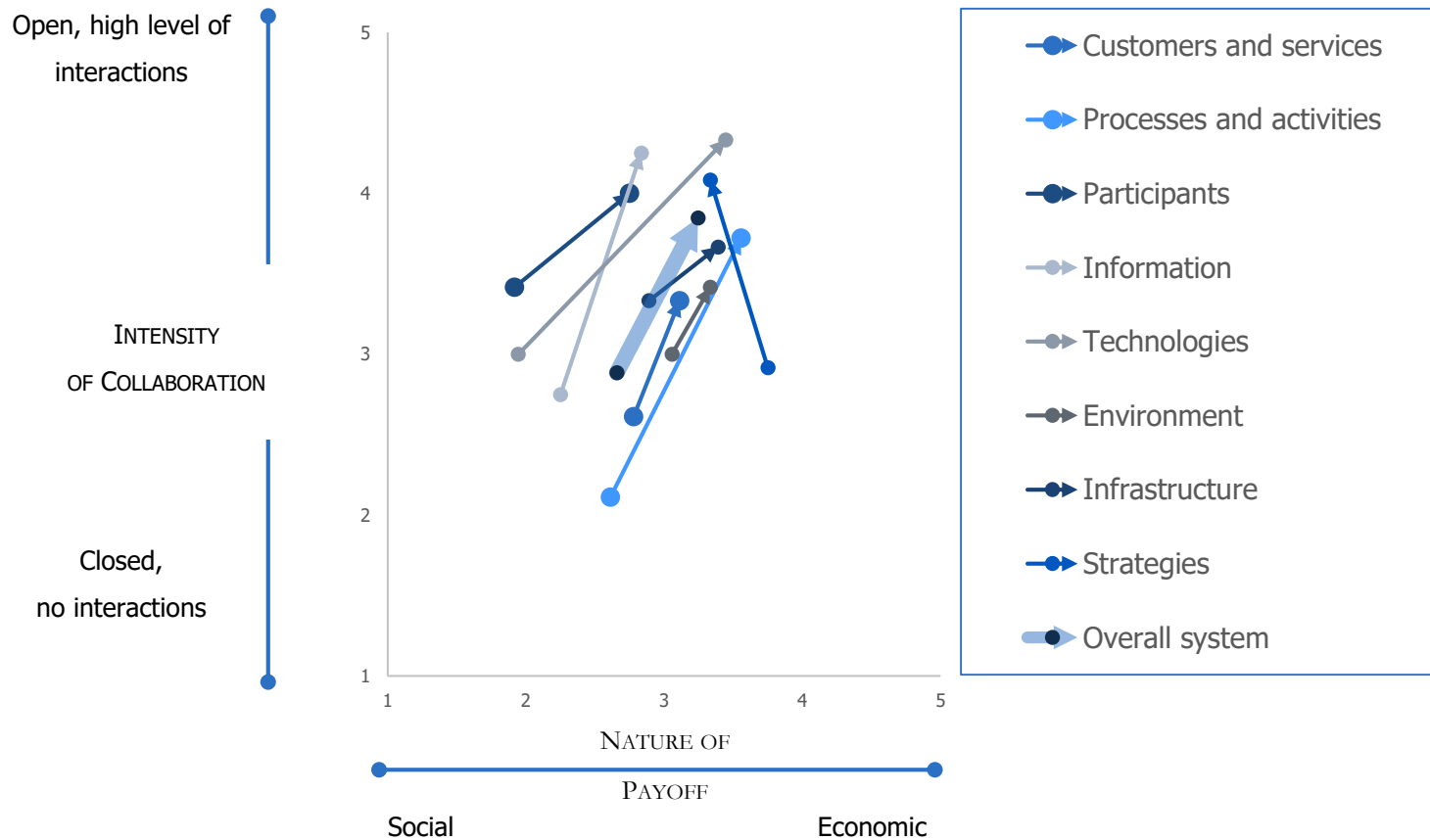
# A wake-up call for the Supply Chain Management

- Reference data models (RDMs) are vital components and protect supply lines. However, vital information is often not available or accessible across their global teams. As a result, their response to the disruption has been reactive and uncoordinated, and the impact of the crisis is hitting many of their companies full force.

In contrast, a small minority of companies that invested in mapping their supply networks before the pandemic emerged better prepared. They have better visibility into the structure of their supply chains. Instead of scrambling at the last minute, they have a lot of information at their fingertips within minutes of a potential disruption. They know exactly which suppliers, sites, parts, and products are at risk, which allows them to put themselves first in line to secure constrained inventory and capacity at alternate sites.

Source: Choi, Rogers, Vakil (Supply Chain Management Wake-Up Call, 2020)

# Study in the transport industry clearly shows: RDM's lead to improved collaboration and higher economic efficiency within the complete work system



Source: Fostering collaborative data exchange using RDMs instead of proprietary data models, Andreas Pelekies, 2020

Suprising aspect of the key findings:

## No success without customisation

### Data exchange today

- Common goal: Digital end-to-end supply chain
- Legacy systems connected via EDI
- Variety in implementation

### Drivers and benefits

- **Keep legacy systems untouched**
- Real-time information
- Increased supply chain transparency

### Challenges

- Lack of trust and access to information
- Lack of harmonized semantics

### Success factors

- **Supporting individual requirements**
- Data sovereignty, secure and safe data transfer
- Harmonized regulatory requirements

# Individual industries have individual requirements and individual implementation standards

## 3.6 Property names

Property names on objects **MUST** be in camelCase.

Property names containing arrays **SHOULD** be plural.

Property names **MUST NOT** include FK (Foreign Key) or PK (Primary Key), as this exposes database design.

Boolean properties **MUST** be prefixed by either **is** or **has**.

## 3.7 Enum values

Enum values **SHOULD** be declared using UPPER\_SNAKE\_CASE.

## 3.8 Arrays

Empty arrays **MUST NOT** be represented with null – but **MUST** be empty lists [].

## 3.9 Date and Time properties

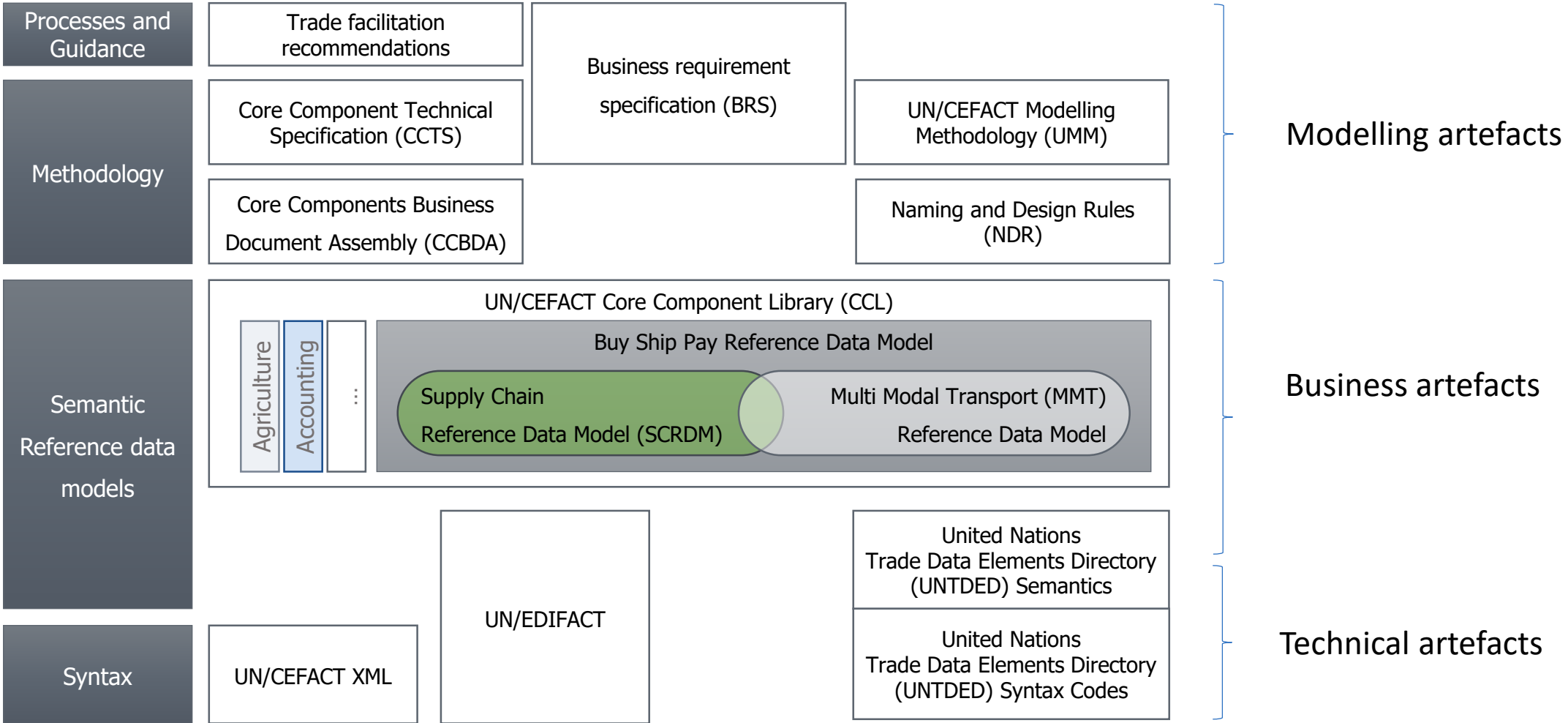
Date properties **MUST** be suffixed with *"Date"*. A Date property only contains a date in YYYY-MM-DD format.

Source: DSCA API Design Principles 1.0, September 2020

# Real world problems: Companies are not starting from scratch!

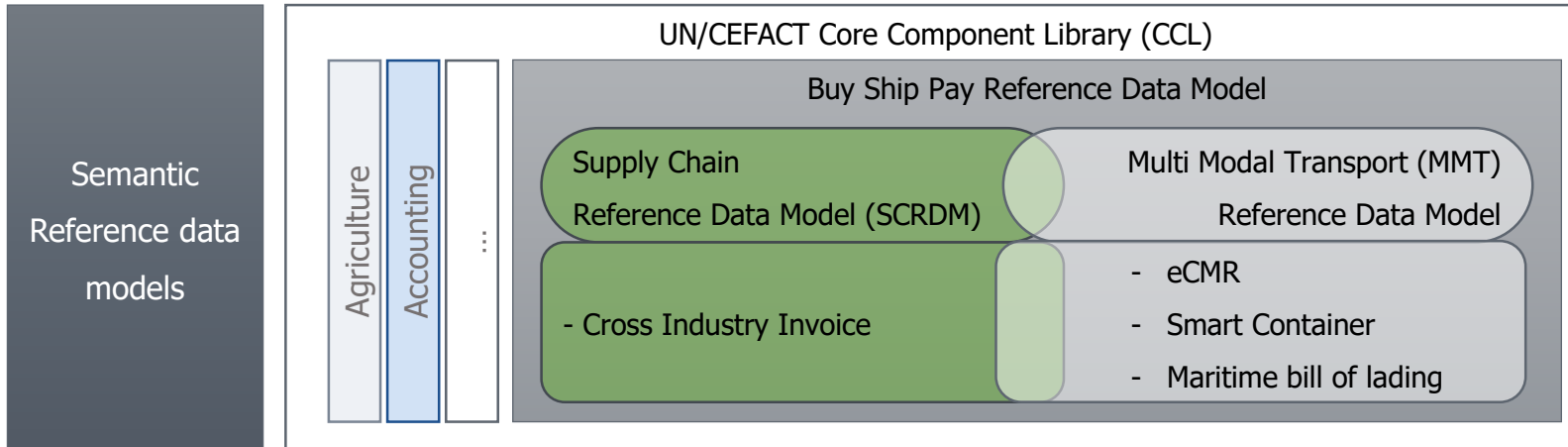
- How and where to apply customization and „My requirements“?
- How to keep the benefits of standardization work?
- How NOT to re-do harmonization achievements?
- How to establish a consistent link to standardisation?

# UN/CEFACT Modelling Framework



# Business artefact achievements

## From general to concrete: Layers of profiles / subsets



### Aspects considered

- Legal requirements and impacts
- Business requirements
- Technical requirements

### Achieved

- Business requirement related subsets of harmonized, interlinked reference data models
- Semantic descriptions, that are interoperable within the complete UN/CEFACT Framework

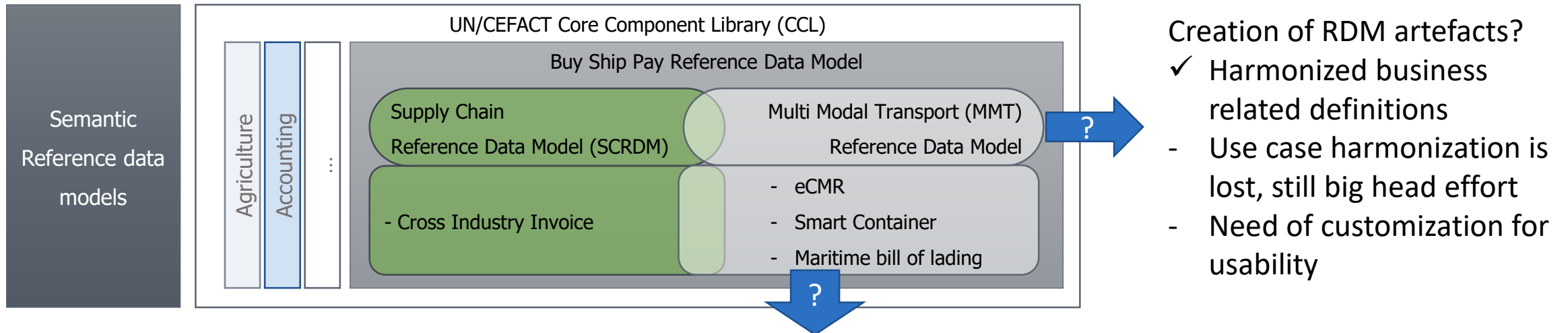


# Challenges with RDM2API publication artefacts

Where to start the creation of API artefacts?

Creation of CCL types?

- ✓ Harmonised (basic) definitions and classes
- All business related harmonisation is lost
- Has to be redone in an external (UML) tool, Big head effort



Creation of RDM artefacts?

- ✓ Harmonized business related definitions
- Use case harmonization is lost, still big head effort
- Need of customization for usability

Creation of profiled RDM artefacts?

- ✓ Harmonized business related definitions
- ✓ Harmonized use cases, include, what's needed
- ☐ Reduced head effort; higher granularity

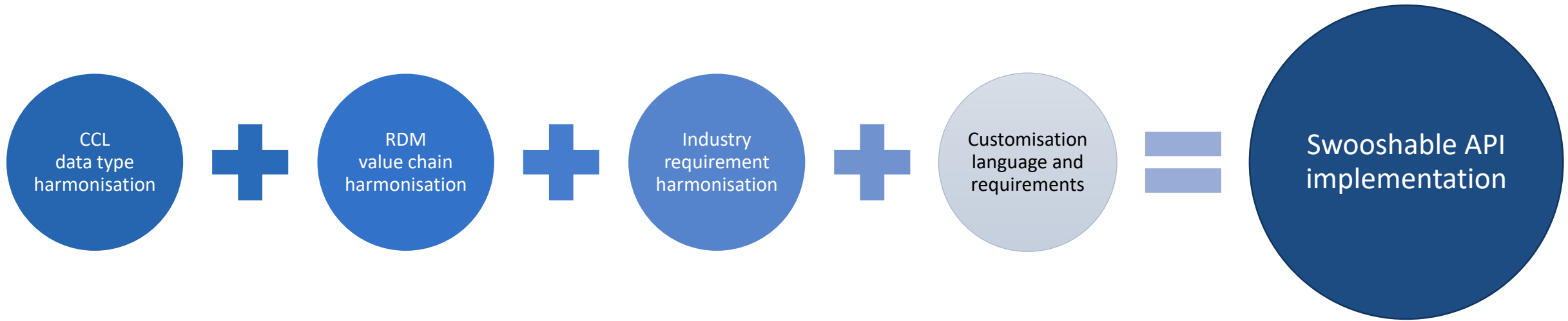
# Challenges of maintenance and governance

- In today's examples the subject matter experts knew what they did and knew the underlying standards
  - ⇒ Model driven approach is the way to go!
  - ⇒ Providing too generic artefacts can lead to inconsistent implementation
  - ⇒ Loosing business harmonisation hinders interoperable solutions
- Doing too late customisation increases head effort, as achievements have to be re-done
- Updating to latest standards, code lists and API artefacts etc. should be swooshable

# Conclusion: RDM 2 API tooling must assure

- Compliance to updated standards and technical artefacts
- Compliance to industry standards  
(e.g. Naming and Design Rules)
- Taking into account individual requirements and legacy systems
- Swooshable APIs with links from standards to implementation  
(LEGO<sup>®</sup> principle: you have fun playing with it and your system does not break, if you do so)

# What if you could combine all of these... ?





Passion for Standards



GEFEG mbH  
Storkower Strasse 207  
10369 Berlin Germany

Phone +49 30 979914-65  
andreas.pelekies@gefeg.com  
www.gefeg.com  
info@gefeg.com