



Energy metering data to Erex

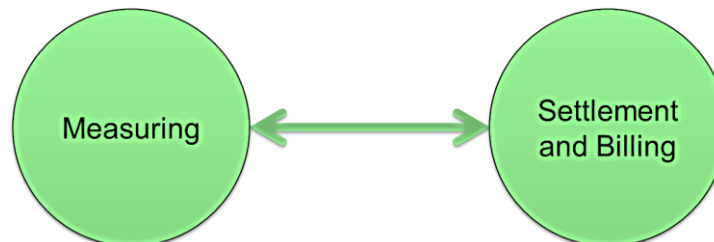
Interfacing and dataflow



Multiple possible purposes of interfacing

- Metering for energy billing
- Metering for onground energy efficiency analysis
- Metering for onboard energy efficiency programs
- Metering for electricity grid surveillance and maintenance
- Metering for electricity grid operational optimization
- Maintenance of energy metering system onboard.

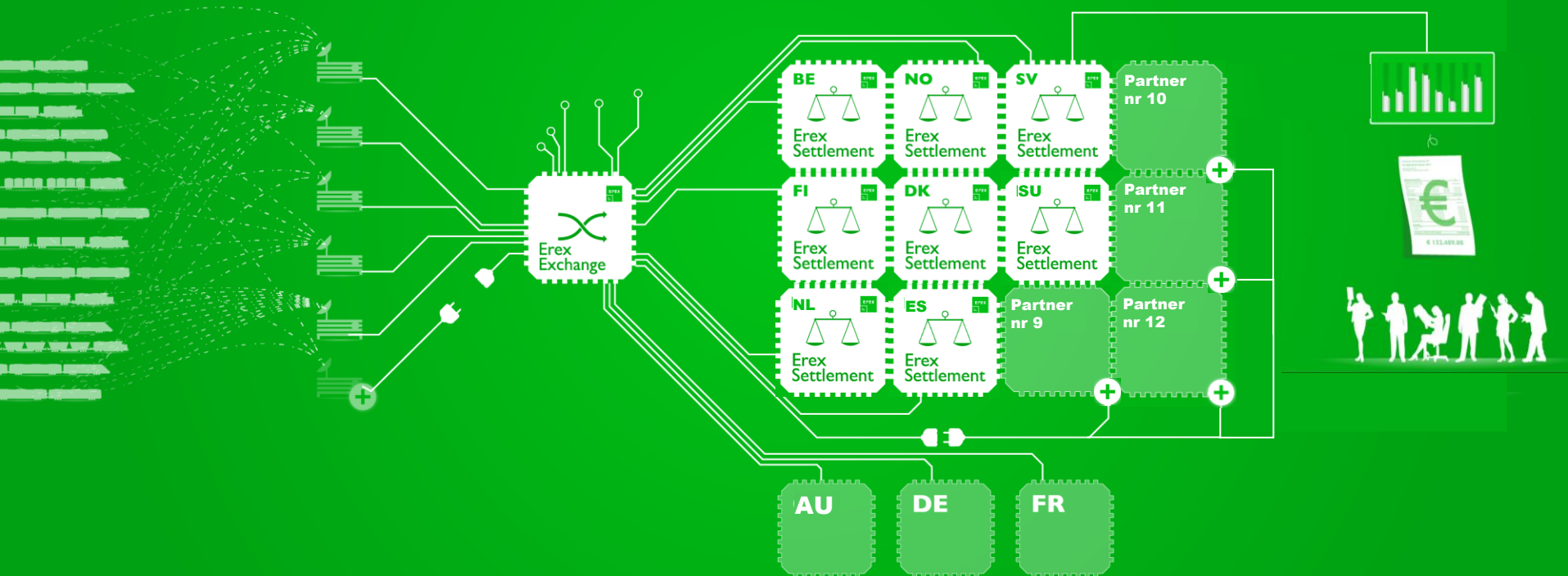
Primary focus of dataflow to Erex:



Erex and Exchange



Train metering point → Data collector → Erex Exchange → Settlement system → Customer



CEBD sources

Older types

- Artificial DCS
- Required file translator
- Non-TSI compliant

2012 Systems

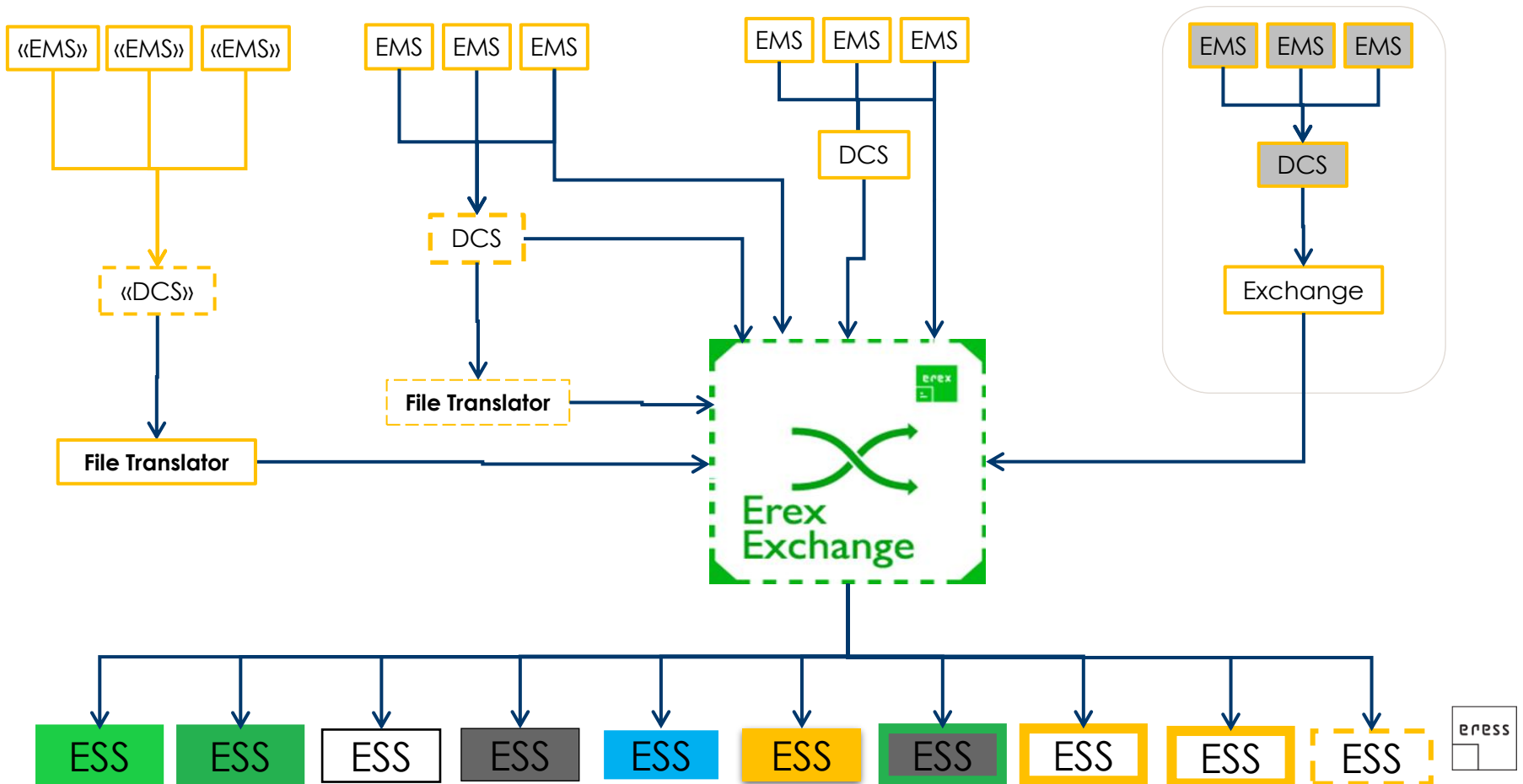
- Optional or Special DCS
- May need file translator
- TSI 2012 compliant
- EN50463:2012 compliant

2017 Systems

- Standard DCS
- Needs no file translator
- TSI 2018 compliant
- EN50463:2017 compliant

Non-Eress IMs

- Delivery from their Exchange
- Standardized file format UIC 930 or EN50463:2017 or UIC 90930
- TSI/EN50463: 2012/2017 compliant



Reception and data handling

- DCS/Exchange
- FTP/email/HTTP
- Messages and formats
- File validation and response
- File/data import and storage
- Data validation and correction
- Data allocation and export

Important actions:

- Testing and implementation
 - Monitoring and Reporting
- Dataflow deadlines and delays
 - Conformity assessment
 - The way forward