



August 2013 / Cal Lankton, Director, EV Charging Infrastructure

EV Charging infrastructure Intelligent Charging Solutions

A global leader in power and automation technologies

Leading market positions in main businesses



Power Products

\$10.7 billion
36,000
employees



Power Systems

\$7.9 billion
20,000
employees



**Discrete
Automation and
Motion**

\$9.4 billion
29,000
employees



**Low Voltage
Products**

\$6.6 billion
31,000
employees



**Process
Automation**

\$8.2 billion
28,000
employees

(2012 revenues)

- **ABB's portfolio covers:**

- Electricals, automation, controls and instrumentation for power generation and industrial processes
- Power transmission
- Distribution solutions
- Low-voltage products
- Motors and drives
- Intelligent building systems
- Robots and robot systems
- Services to improve customers productivity and reliability

Why ABB?

Solutions for the whole EV charging value chain



DC Fast Chargers

- Terra systems



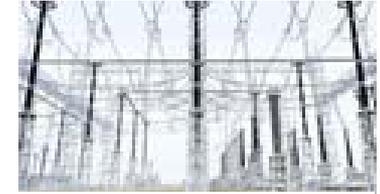
Energy storage

- B.E.S.S.



Power Quality

- PQF, PCS100



Substations

- Power systems



AC Chargers

- AC charger range

ABB's future-proof solutions will work together seamlessly throughout the whole value chain



Grid Automation

- SCADA & Ventyx



Charging Network Software Services

- Galaxy services



Building Automation

- KNX, energy mngt.



Components

- DIN rail & distribution boards

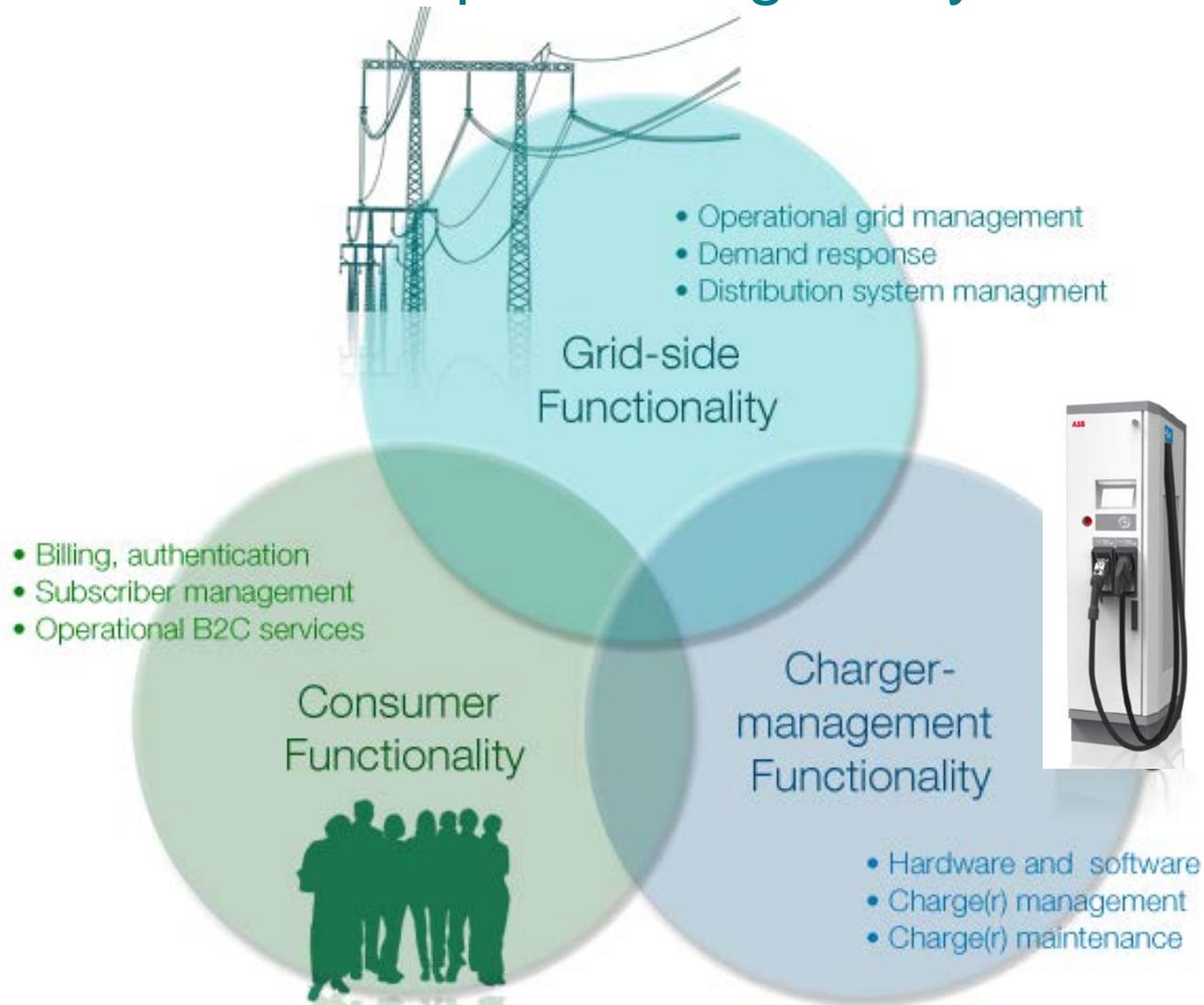


Renewable Integration

- HVDC, solar, wind

Business Models require the merge of Power and IT

A consistent and clear positioning is key



Positioning Connected Services

Electric cars

Charging infrastructure

Solutions to run a charger network



CCS
CHAdeMO
GB
AC



Connected
Services



We do not have exclusive cooperation with any of the solutions



API are available via the internet



Flexible

- Easy to connect to different systems (back-office, demand/response, payment)
- Adopting latest industry developments
- One time integration. Adding a charger is adding an ID

Secure

- All parts of the chain are secured
- End-to-end security monitoring
- Secure data center (ISO27001)

Reliable

- End-to-end performance monitoring
- SLA for API and data services
- Access to all your data

Connected services facts

Implementations

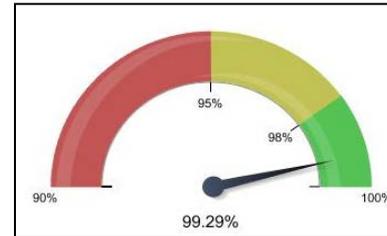
- 23 OCPP implementations running in production
- Implementations cover back-office solutions, energy systems and government statistics systems
- Covers US, EU and Asia
- Requirement for OCPP from developers and governments across EU is common

Customer demand

- OCPP1.2 is still preferred by our customers
- Subset of messages is sufficient to cover all use cases (Start, Stop, Remote, StatusNotification,...)
- Main request is on pricing messages and detailed status information

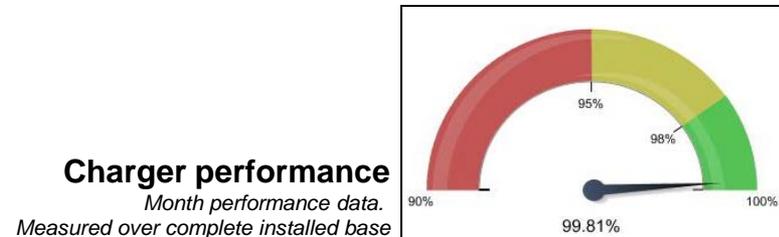
Performance

- API availability/ Uptime > 99.99%
- Mobile connection performance > 99.2%



Mobile connection performance

*Month performance data
Measured over complete installed base*



Charger performance

*Month performance data.
Measured over complete installed base*

Power and productivity
for a better world™



EV Charging Infrastructure Product portfolio overview



Terra 51

50 kW DC fast
charger

Web connected
intelligent DC fast
charging systems



Terra SC + AC Wall Box

20 kW DC fast +
Level 2, 6 kW AC

Web connected
intelligent DC fast
charging with
satellite AC box



Galaxy

EV infrastructure
management tools

Web-based services
for site management,
statistics and
configuration



Galaxy

Integration
services

Professional back
office integration
services (via
OCPP or other)

Combo-charging solutions

Meeting the needs of all drivers

**October
2013**



**Terra 53 C
DC
Fast Charger**

- 50kW DC Combo
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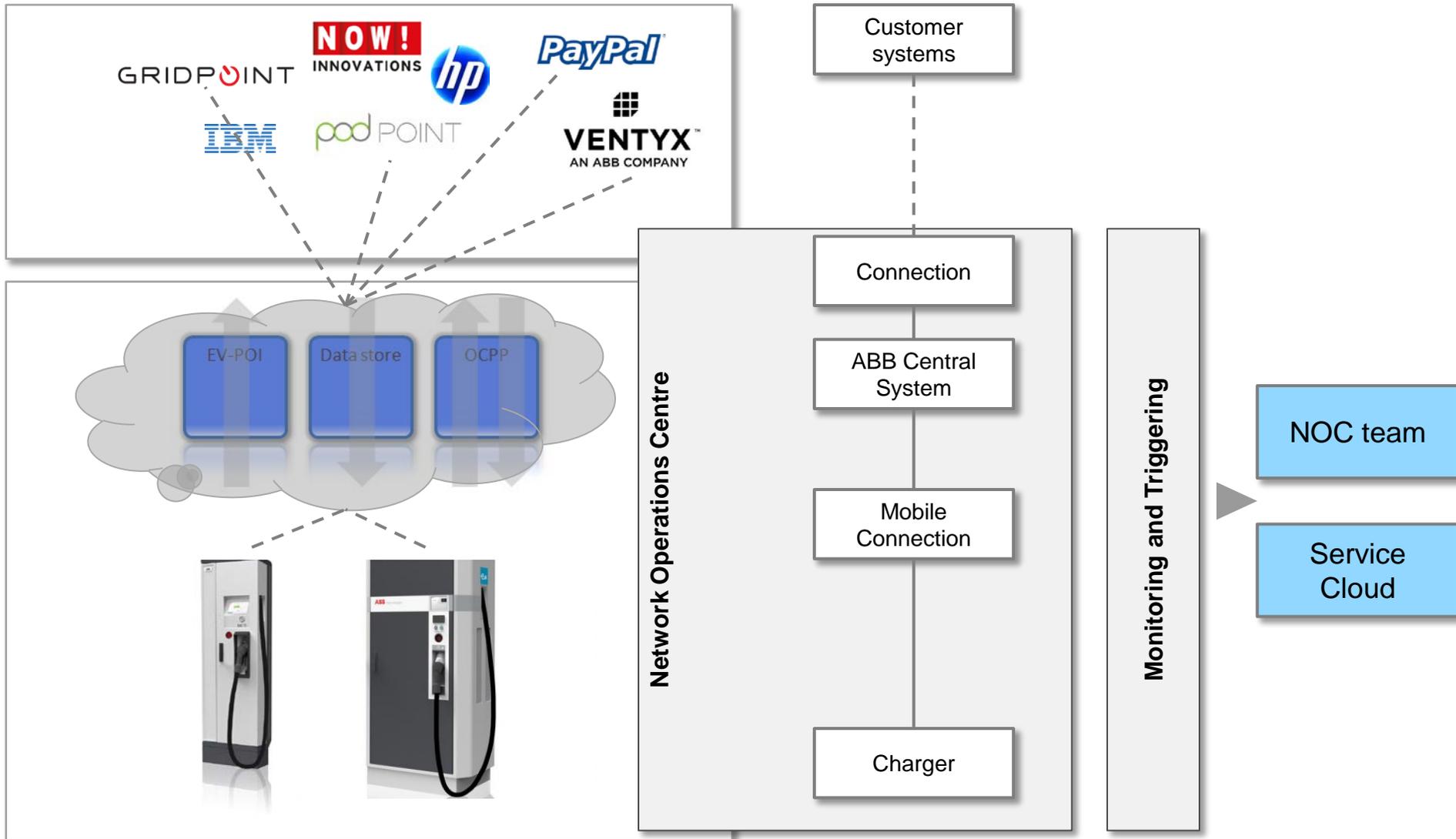
**December
2013**



**Terra 53 CJ
DC
Highway Charger**

- 50kW DC Combo
 - 50kW DC CHAdeMO
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The Network Operations Center



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