

Gearing up to meet Africa's  
rising power and water demand



12 – 14 May 2015  
Cape Town, South Africa



**AFRICAN  
UTILITY  
WEEK**

**CLEAN POWER  
AFRICA**



**spintelligent**  
**CLARION  
EVENTS**

- Don Taylor
- Chairman
- STS Association
- South Africa



**STANDARD TRANSFER  
SPECIFICATION**

# Smart building blocks for smart meters



# What makes a meter smart?

- key question ...?
- no single definition
- traditional metering in a smarter way
  - improved communication latency + bandwidth
  - multi-device with distributed functions (IOT)
  - local intelligence for offline processing
  - end to end security
- smart metering = system

# Traditional metering functions

- remote online connection
- on demand reading
- scheduled reading
- complex tariffs
- prepayment with currency transfer
- demand-side management
- state of the art security

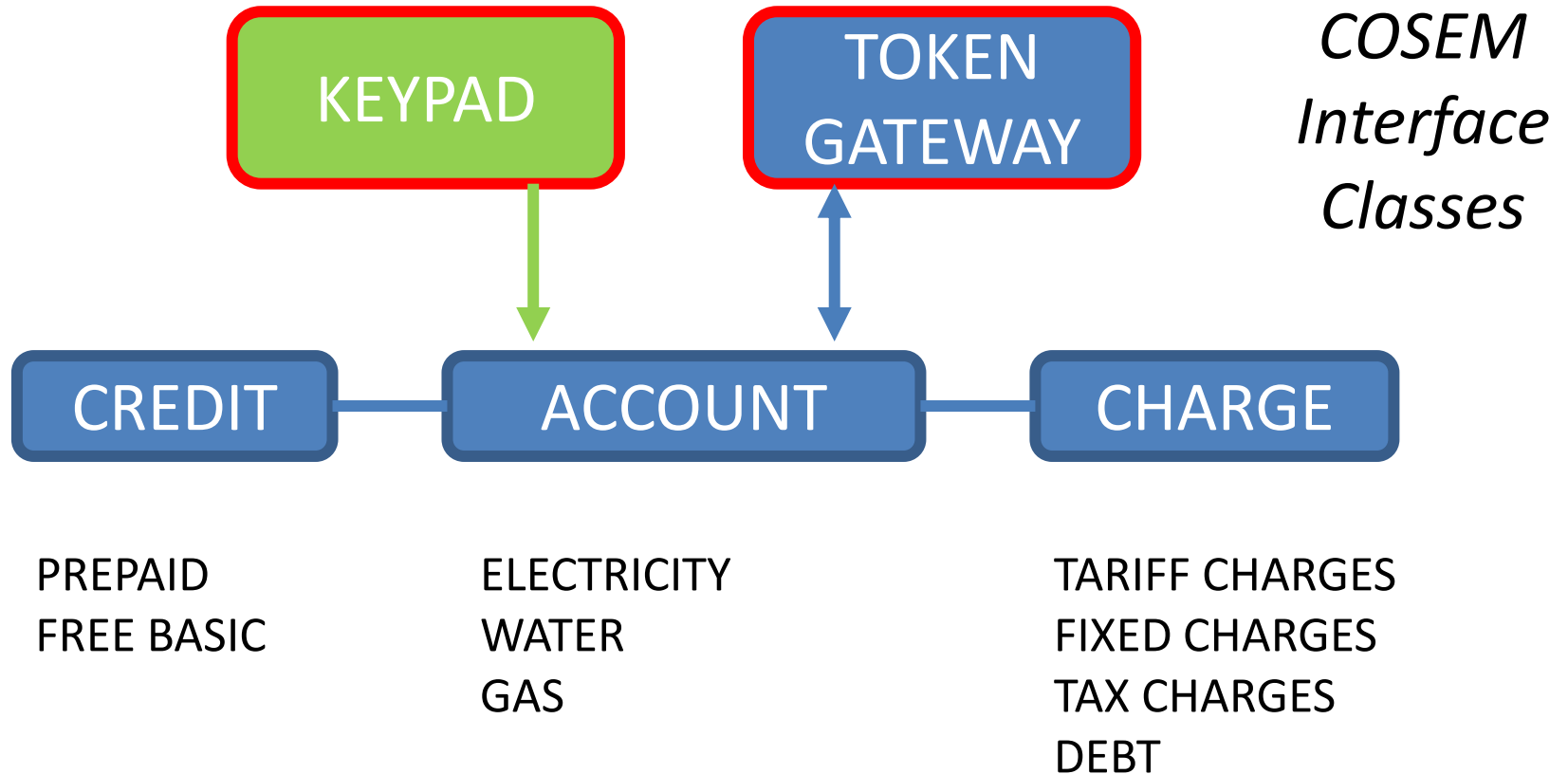
# Open standards + interoperability

- utilities: prevent vendor lock-in
- vendors: stable, flexible product platforms
  - short time to market
  - without compromise to quality
- IEC 62056 DLMS/COSEM series
  - satisfies utility and vendor needs
  - offers standard building blocks
  - jointly define smart meter functions
  - stimulates innovation

# What happens to STS ?

- STS now integrates with DLMS/COSEM
  - STS101-2: STS over DLMS/COSEM
- This combination offers:
  - online token transfer with offline keypad channel
  - currency transactions
  - accounts with multiple credit and charge types
  - complex tariff
  - remote reading
  - demand-side management

# ACCOUNT building blocks



*Token entered via STS keypad or via Token Gateway*

# TARIFF building blocks



*3-Rate TIME OF USE tariff example*



# METERING building blocks

## REGISTERS

ENERGY

POWER

VOLTAGE

CURRENT

POWER FACTOR

FREQUENCY

FORWARD

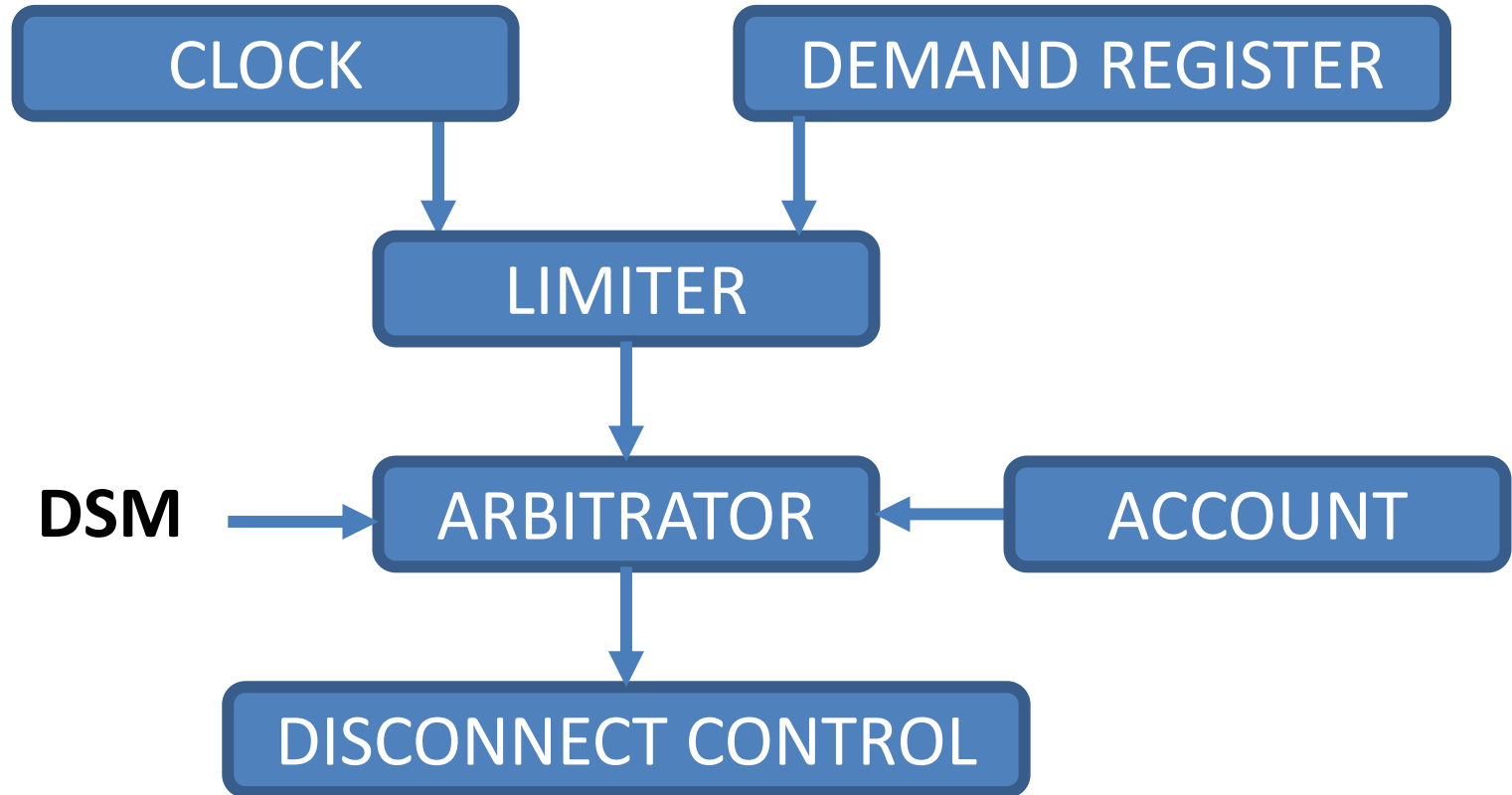
REVERSE

*REGISTERS capture  
measurements*

*OBIS codes  
define the type*

*Approx 90 measurement types available*

# LOAD CONTROL building blocks



*Power limit, Prepayment, remote DSM example*

# SECURITY

- Enhancement of STS to state of the art security levels
  - revision of IEC 62055-41 in progress
- DLMS/COSEM provides additional security
  - multiple client access control down to data element level if required
  - end to end security
  - authentication (certificates)
  - privacy (encryption)

# Conclusions

- STS and DLMS/COSEM integration
  - Provides smart building blocks for smart meters
  - Maintains backward compatibility with legacy STS systems
  - Avoids obsolescence of existing infrastructure investment
  - Prevents vendor/utility lock-in
  - Ensures interoperability of meters from multiple vendors

Thank you

