



ASTANA
ELECTRONIC
LABORATORY

SMART MONITORING SYSTEM FOR DRY-TYPE TRANSFORMER

RENEWABLE ENERGY

RENEWABLE

ENERGY

VARIABLE

RENEWABLE

ENERGY

VARIABLE

UNCERTAIN

RENEWABLE

ENERGY

VARIABLE

UNCERTAIN

BALANCE

RENEWABLE

ENERGY

VARIABLE

UNCERTAIN

BALANCE

SMART GRID

SMART GRID

SMART GRID

**BETTER
FORECASTING**

SMART GRID

**BETTER
FORECASTING**

**DEMAND
RESPONSE**

SMART GRID

**BETTER
FORECASTING**

**DEMAND
RESPONSE**

INTEGRATED STORAGE

SMART GRID

**BETTER
FORECASTING**

**DEMAND
RESPONSE**

INTEGRATED STORAGE

ADVANCED ENERGY MANAGEMENT SYSTEM

SMART GRID

**BETTER
FORECASTING**

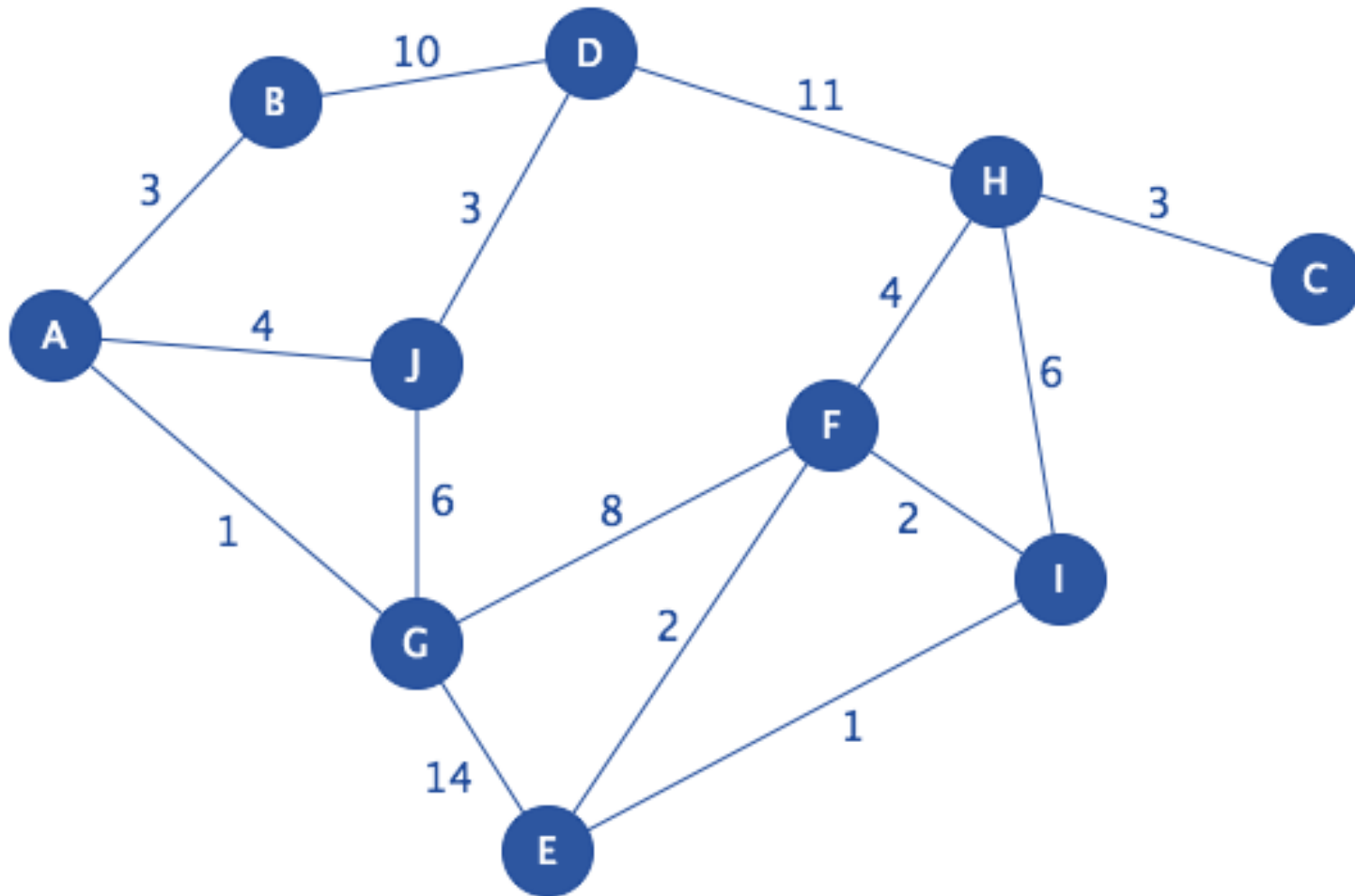
**DEMAND
RESPONSE**

INTEGRATED STORAGE

ADVANCED ENERGY MANAGEMENT SYSTEM

DYNAMIC LINE RATING

DYNAMIC LINE RATING



TRANSFORMER



Smart Monitoring System for Dry-type Transformer



Smart Monitoring System for Dry-type Transformer



100%

Loading Capability

Smart Monitoring System for Dry-type Transformer



100%

Loading Capability



Remote Diagnosis

Smart Monitoring System for Dry-type Transformer



100%

Loading Capability



Remote Diagnosis



Security

Smart Monitoring System for Dry-type Transformer



100%

Loading Capability



Remote Diagnosis

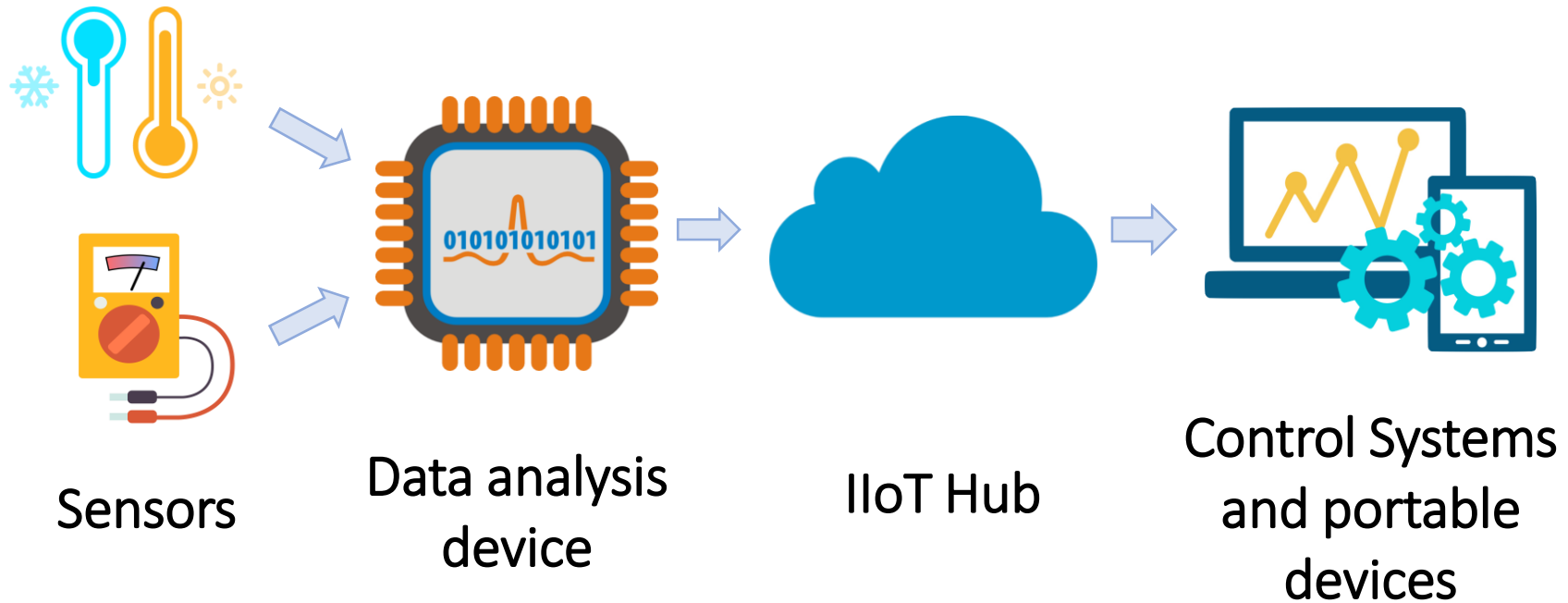


Security



Remained Lifetime

Smart Monitoring System for Dry-type Transformer



Analysis Techniques

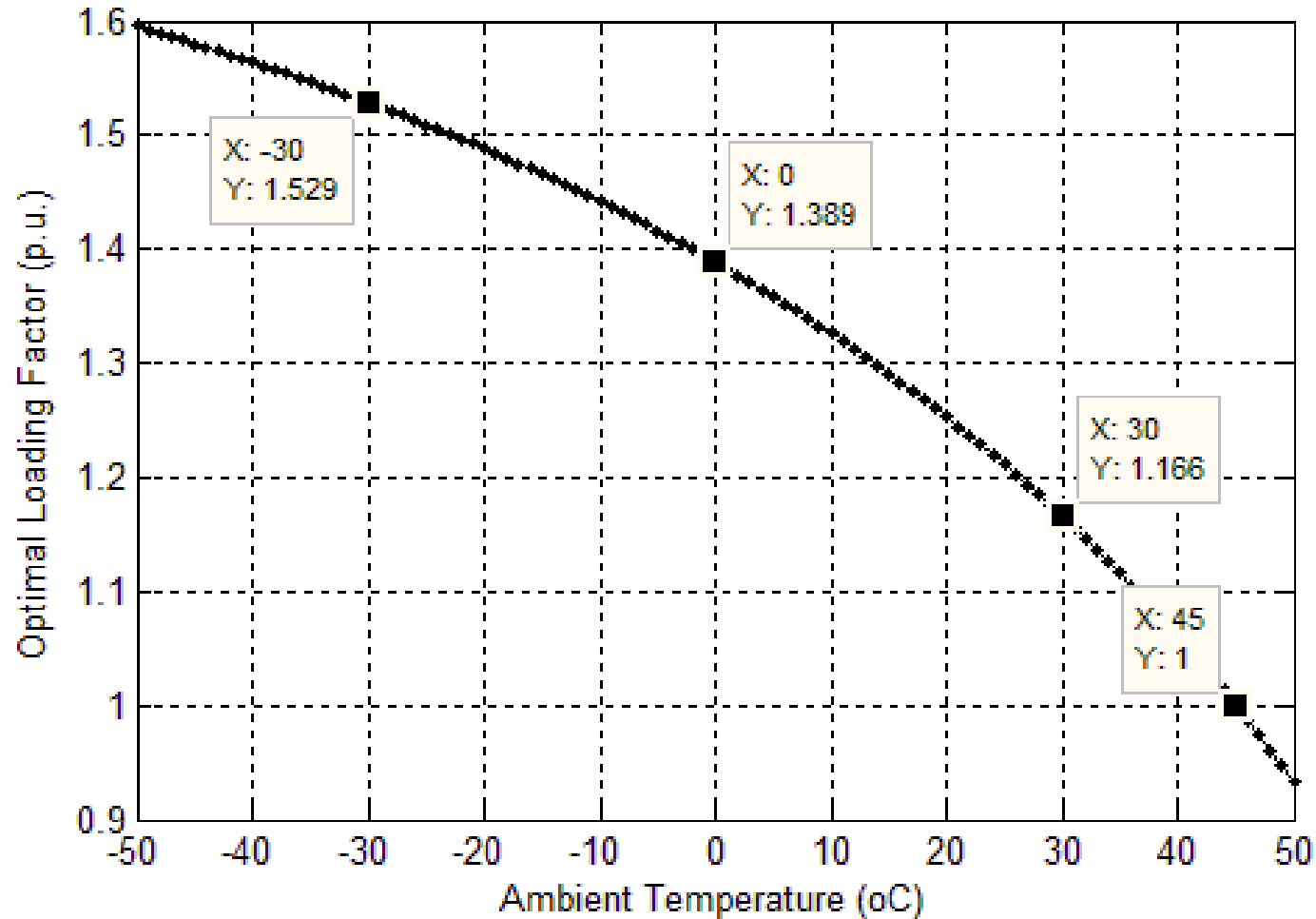


Analysis

- Loading Capability Analysis
- Temperature Analysis
- Aging Analysis
- Moisture and Dust Analysis
- Losses Analysis
- Harmonic Distortion Analysis
- Partial Discharge Analysis*
- Vibration Analysis*

*under development

Loading Capability Analysis



Smart Monitoring System for Dry-type Transformer



Increase Lifetime



Increase Productivity



Decrease Maintenance
Expenses



Decrease Failure Risk





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