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**CENTRAL ASIAN REPUBLICS**

**USAID Regional Energy Security, Efficiency and Trade Program (RESET)**

**“Regional Energy Security Information System”**

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Workshop

“Management water information in Central Asia”

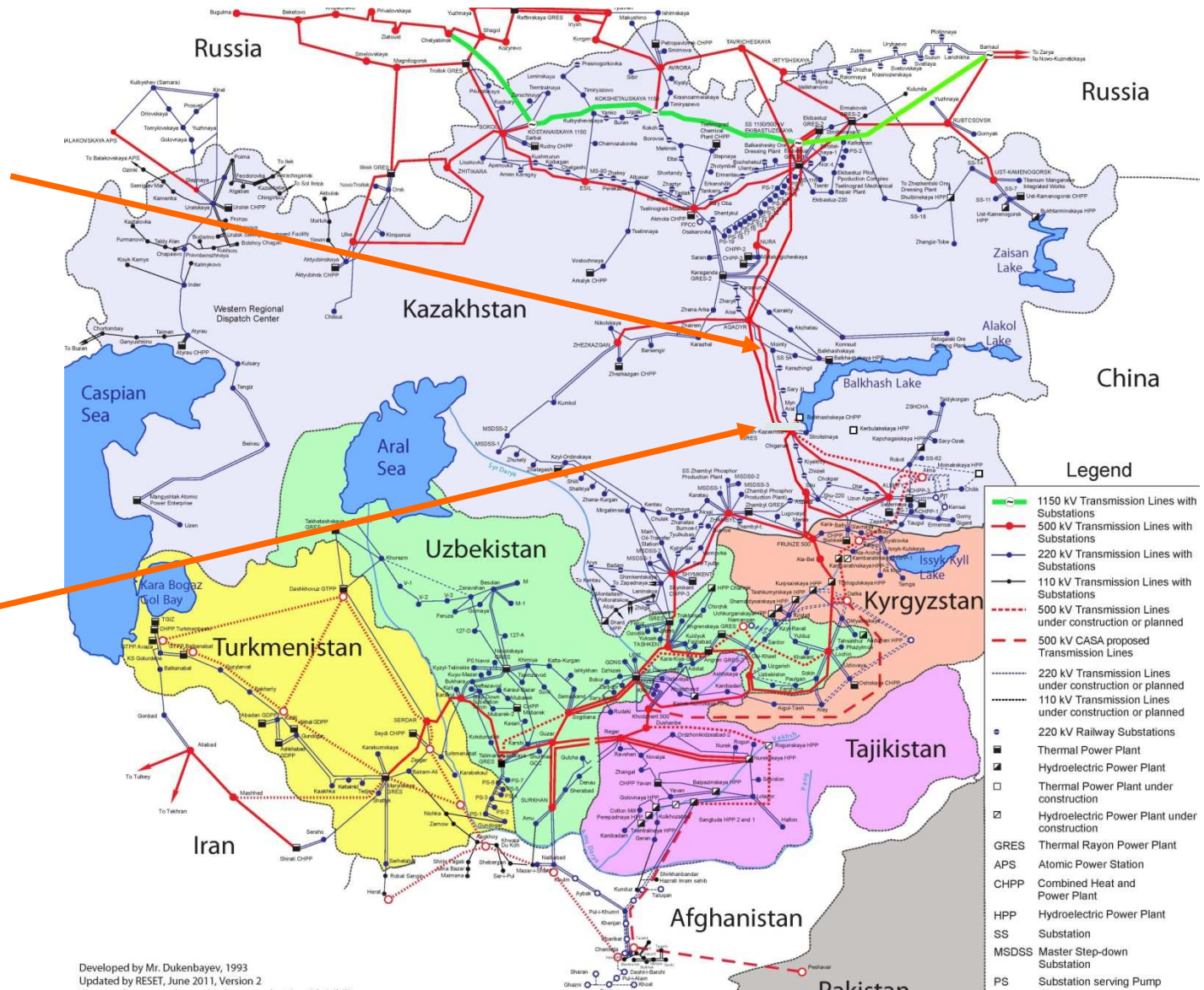
December 7, 2011

Almaty, Kazakhstan

# Central Asia Power System

These lines (among others) did not exist

Before 1991 The CAPS was isolated from the rest of the Soviet Union



# CAPS and Kazakhstan after 1991

- Between 1991 and 2000 Kazakhstan was constructing backbone lines connecting Northern and Southern part of the country.
- CAPS operated being interconnected, sometimes in parallel with separate islands in the Northern Kazakhstan
- From 1996 to 2000 Kazakhstan was disconnected from Russia (UPS)
- Starting 2000 CAPS operated in parallel with N. Kazakhstan and Russia
- Turkmenistan did not sign the agreement on parallel operations but remained synchronized before June 2003
- Tajikistan was disconnected in December 2009

# Background

## Is it needed?

- Fully integrated information system is a crucial part of electricity market operation

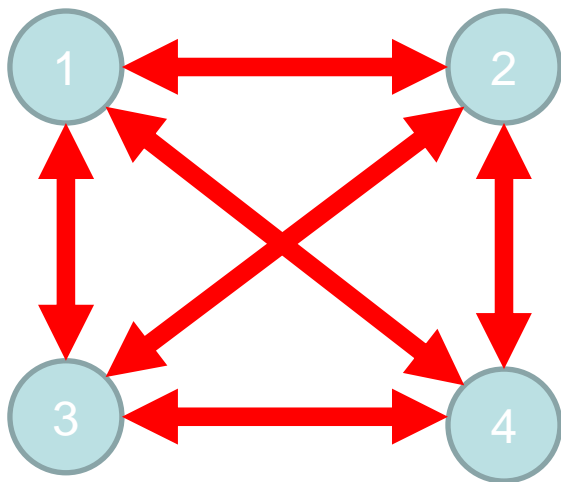
## Centralized or distributed?

- Data ownership
- Individual share
- Confidential information
- Commercial data
- Limited share data type and time
- Data share monitoring

# Integration

## Direct integration

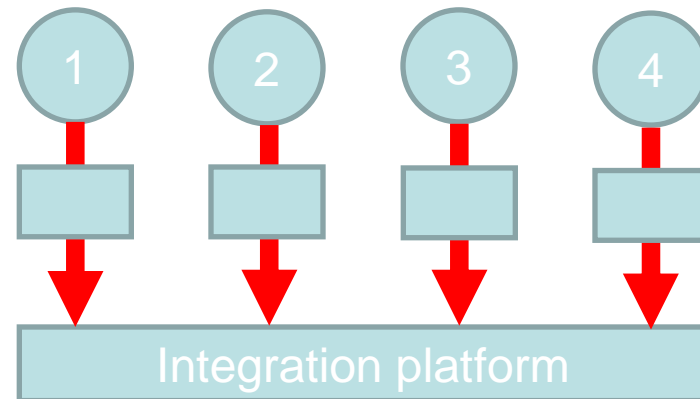
System-to-system



- 6 projects for 4 systems
- Long time and high price
- Project time vendor collaboration is needed
- Each system upgrade causes new n-1 integrations update
- System collaboration logic sewed into systems and hardly changeable

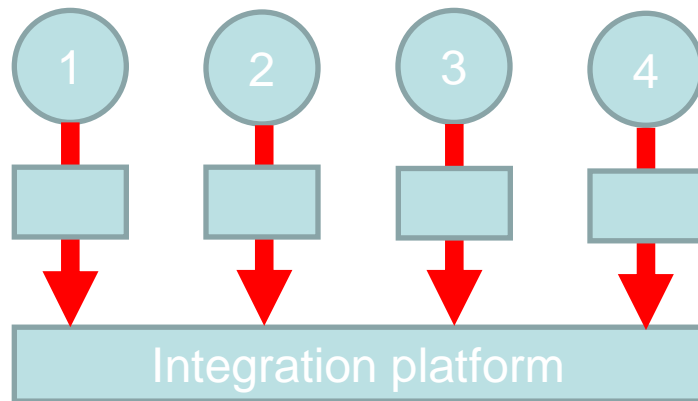
## Service Oriented Architecture (SOA)

Exchange through the integration platform



- Systems collaborate through the platform via adapters (all modern systems have them)
- Logic inside the platform, flexible easy changeable
- Full control on data exchange

# Implementation process (old approach)



1. Regional information systems and databases audit
2. Demonstration of integration technologies on regional level
3. Trainings and support on adapters developments
4. Selection of entity for pilot
5. Pilot services integration implementations
6. Further system extension support

## Challenges

1. Low level of knowledge in IT and management
2. Low knowledge in modern IT security methodologies and as a result no trust to data exchange platforms
3. Significant difference in Capacity Maturity Level integration, low understanding of integration importance
4. Lack of modern systems
5. Uncoordinated poor managed separate IT projects with no consideration of further integration

# Implementation process (new approach) 1

## Information / promotion:

- real time demonstration of lost opportunities caused by ignorance or delay of regional wholesale and balancing electricity market advantages to improve understanding of market benefits;
- promoting step-by-step improvements with evaluable results;
- providing tools for real time improvements monitoring.

# Implementation process (new approach) 2

## **Environment / infrastructure:**

- data providers and data consumers analyses;
- information systems maturity level analyses on enterprise, national and regional level;
- relevant improvements with diversified individual approach based on information systems integration maturity level;
- data quality analyses and improvement plan;
- software development, implementation and integration processes streamlining;
- strategic planning in IT, solution selection and implementation process support;
- development of recommendations and requirements on information system architecture based on International standards and best practices for planned IT projects.



# Implementation process (new approach) 3

## **Human resources, trainings for company management and IT management staff on:**

- IT management;
- IT project management;
- modern enterprise architecture and IT role;
- business modeling and restructuring frameworks;
- business analysis;
- system improvements and integration;
- information security.

# Implementation process (new approach) 4

## Communications:

- unified database of implemented and planned projects;
- societies for experience exchange;
- selecting the group from representatives from market entities and related bodies interested in and responsible for integration standards and processes.

## Implementation process (new approach) 5

### **Technical platform for regional information system, integration methods and technologies:**

- demonstrations;
- recommendations;
- trainings;
- pilot projects;
- implementation and maintenance support.

# Implementation process (new approach) 6

## **Compliance:**

- demonstration and implementation of the best international practices and standards in IT;
- coordination of IT project planning and implementation with electricity market members, related organizations and donors;
- development of policies, rules and requirements in IT.

# Thanks!

**Questions ???**

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