Communications Challenges facing today's Utilities
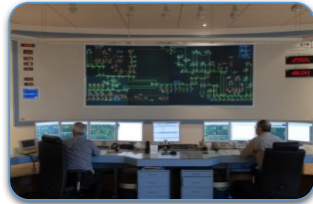
Today's Utility

GALAXY

AMI

Disaster Recovery

Distribution Automation

Management Center

Substation Communications

Field Force

Challenges?

- What are my technology choices?

- I need real-time connectivity?

- How secure is my data?

- Can I remote manage my assets?

- What's the commercial model?

- Is there equipment available?

- How can I keep this project within budget?

Agenda

- Introduction to Galaxy 1
- Utility Portfolio
- Galaxy 1 Value Added Services
- Security
- Support

Galaxy 1 – Who are we?

- Founded in April 2005
- Core business is integration of:
  - Airtime services
  - Equipment
  - Software platforms
  - Consultancy
- Key distinguisher:
  - In depth technical expertise,
  - development of value added services (innovation)
  - online billing and management
- Geographical presence:
  - US (Fort Lauderdale, Dallas)
  - Europe (London UK, Worden Netherlands)
  - Singapore

Galaxy 1 – Our Focus

- Connectivity solutions
- Cell / L & S – Band / KU / KA
- Partners & integrators
- Close partnerships with hardware suppliers
- Global presence
- Technology focused
- Security standards
- Commercial distinction between standard and secure networks
- Multiple sectors

Utilities, Oil & Gas, Media, Environmental, NGO, Rail & Mining.
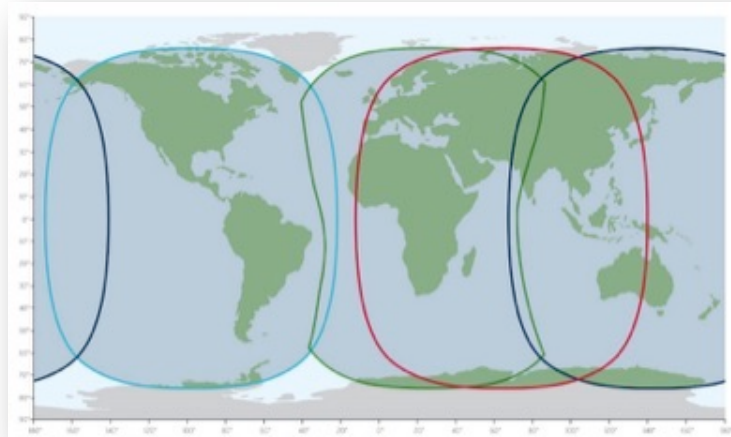
Inmarsat– Global Satellite Footprint

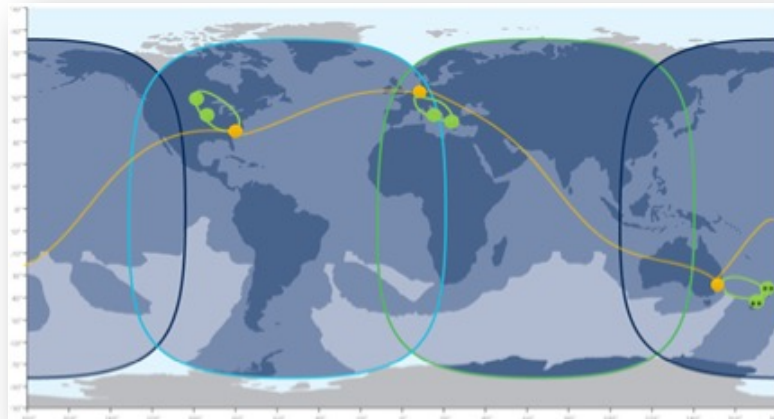**Inmarsat-4 network**

L-band (1.5GHz)

4 satellites

3G IP platform

Inmarsat-5 network

Global Xpress

Ka-band (29GHz)

3+1 satellites

Galaxy 1 – Utility Product Portfolio

BGAN
BGAN M2M
BGAN Link

- Standard IP data up to 464 kbps
- 3GPP with global L-band (I-4) coverage
- Single global SIM, no roaming fees
- Remote terminal management
- For real-time surveillance, high-volume metering and telemetry.
- Hybrid Communications

BGAN PTT

- Standard IP data up to 464 kbps
- 3GPP with global L-band (I-4) coverage
- Single global SIM, no roaming fees
- Remote terminal management
- For real-time surveillance, high-volume metering and telemetry.

IsatData Pro

- Event-based messaging with latency < 30s
  - Store & forward up to 10 kB (< 1kbps)
  - Embedded application capability
- Single global device, no SIM, no roaming fees
- RESTful APIs for secure exchange of data

Hybrid communications

The power of satellite and **cellular communications** in one device with one IP address

Requirements from users with critical infrastructure:

- Two independent data paths that automatically fail-over
- One IP address for RTU or end device
- Independent of individual cellular operators

One device, two airtime services

Cobham 540

- BGAN M2M and Galaxy 1 global cellular roaming data

- Automatic failover

- Integrated 2G/3G/LTE modem

- IP66 - no enclosure needed

- Power over Ethernet (PoE) and 10-32 VDC input

- Remote terminal management in RTM

Galaxy 1 are providing solutions for the following Utility applications:

- Field-Force Automation
- AMI
- Distribution Automation
- Sub-Station Automation
- Disaster Recovery

GALAXY 1

Existing utility customers

- Pacific Gas and Electric Company (PG&E)
- Southern California Edison
- BC Hydro
- Tenaga Nasional — Better. Brighter.
- SSE
- WaterNSW
- UK Power Networks
- SGN
- Ergon Energy
- ONEOK

Value Added Services from Galaxy 1

Galaxy 1 – Security

- Galaxy 1 offers a dedicated network designed for Utility customers
- Private Network with no Internet Ingress
- Dedicated customer APN's for added security and traffic separation
- Network designed towards various standards:
  - Nerc, Ferc, ISO, NIS Directive, SOC 2
- Value Added Services can be bypassed
- Two factor authentication
- Closed User Groups
- Proactive monitoring and alerts
- Advanced Cyber Security monitoring tools
- New Houston POP located on secure US air force base

# Secure Satellite Network for critical infrastructure
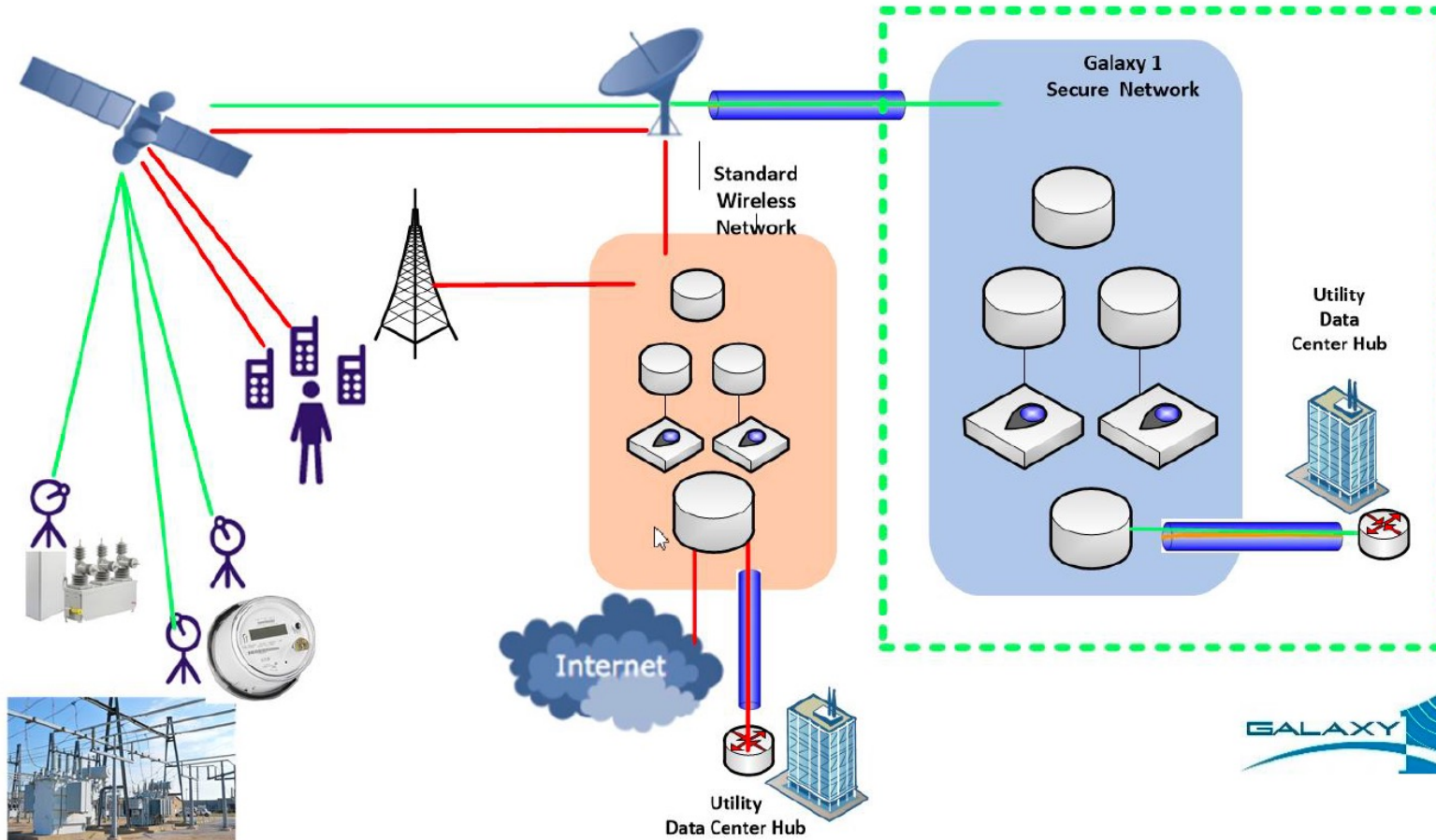
Billing & Provisioning – IBIS

- Realtime provisioning into operators for both satellite & cellular
- Sim card set up & configuration onto customer's network
- Realtime CDR's for usage monitoring & alerting
- Multiple alerts to prevent bill shock
- Cost Centre structure for accurate cost allocation
- Automated billing process for accurate on time invoices
- Multi layered user access
- User friendly interface
- Detailed Reporting
- Support trouble ticket system
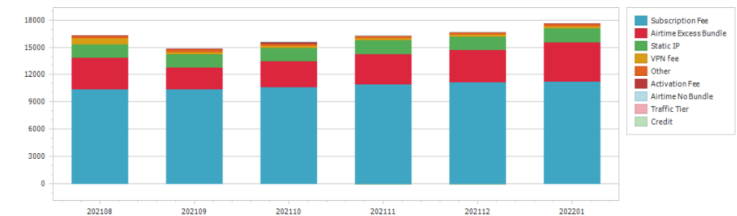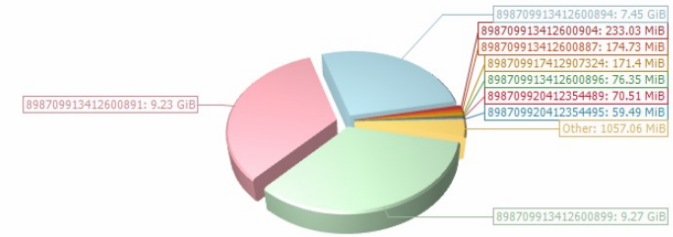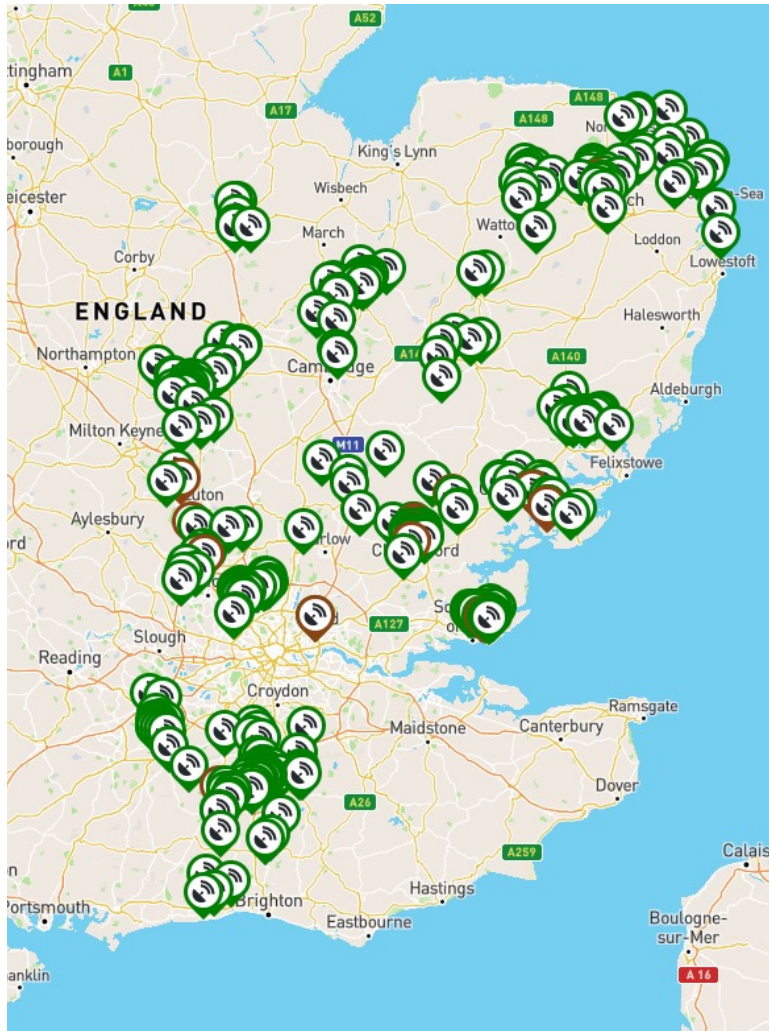
Remote Terminal Manager – RTM

- Ability to manager and control assets from your desktop
- Check status of terminals
- Check status & statistics of your end-to-end network
- Update configuration of terminals
- Update Firmware
- Asset tracking including location
- Provides usage overview
- Ideal for troubleshooting
- Shows Hybrid information on which Network is in use
- Proactive alerting

Upload Picture

Change Password

Look up in IBIS

Send SMS

Connect

Disconnect

POP Disconnect

Reboot

Retrieve ARP Table

Status and GPS Report

Remote Web Admin

Load Firmware

Retrieve File

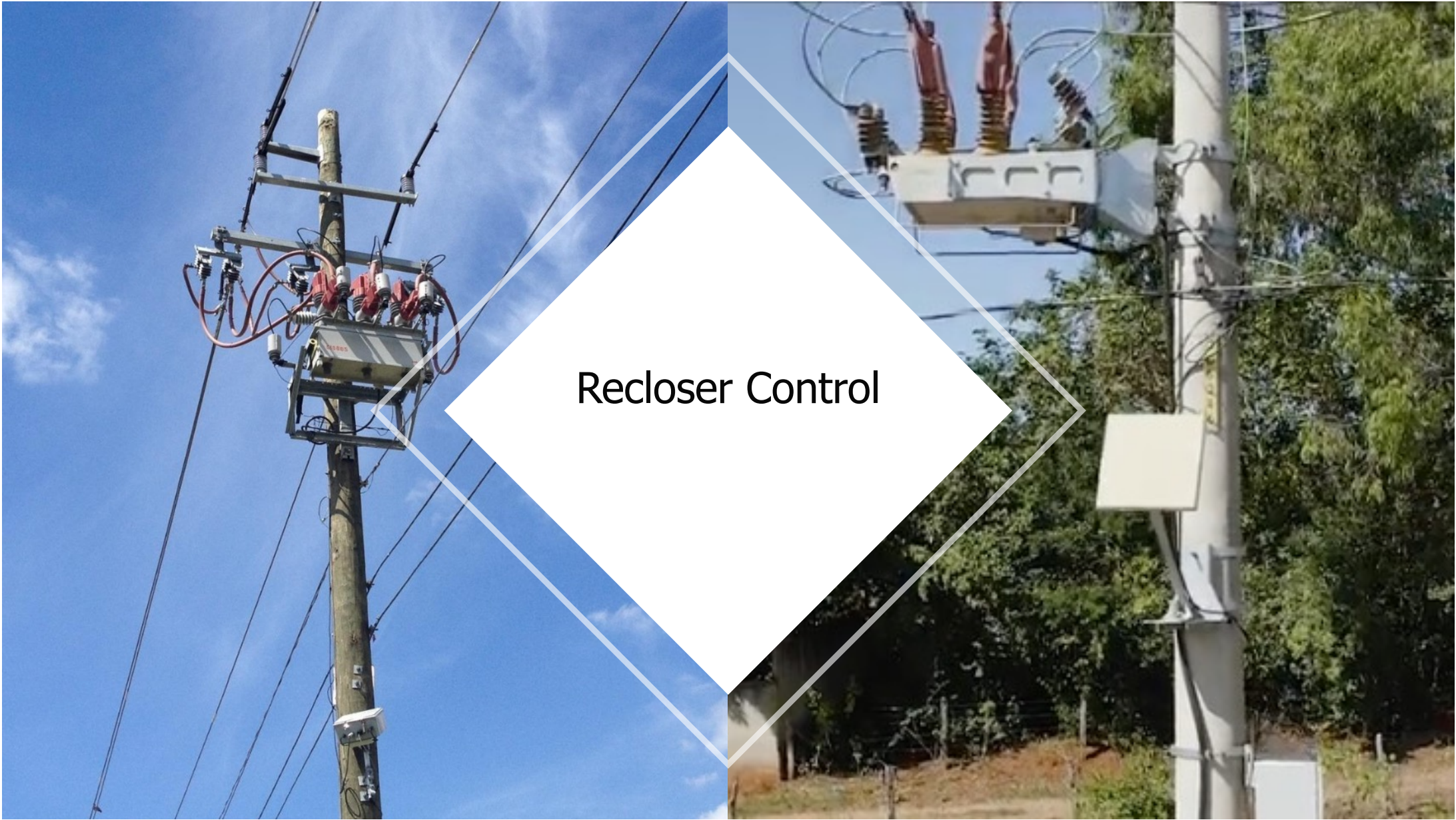Update configuration

Set APN

Utility Deployments from Galaxy 1

Field-force

BGAN

EXPLORER COBHAM

Recloser Control

Smart Meter Backhaul

Sub Station
Connectivity

Disaster Recovery

Galaxy 1 – Support

- Galaxy 1 offers 24 / 7 support to its customer globally

- Support levels tailored to customers requirements

- ITIL applied in line with the satellite industry support standards

- In-house system (IBIS) for creating, monitoring and tracking of support tickets

- Ticket Types
    - Incident
    - Service Requests - (Provisioning)
    - Change Requests

- Incident Classification

Challenges?

- What are my technology choices?
  - Hybrid Communications.
- I need real-time connectivity?
  - Real Time and Store & Forward.
- How secure is my data?
  - Private Network Designed for Utilities.
- Can I remote manage my assets?
  - Remote Terminal Manager.
- What's the commercial model?
  - Flexible Pricing options across the Utility via IBIS.
- Is there equipment available?
  - Equipment stocks are now increasing.
- How can I keep this project within budget?
  - IBIS Billing Platform with controls and monitoring.
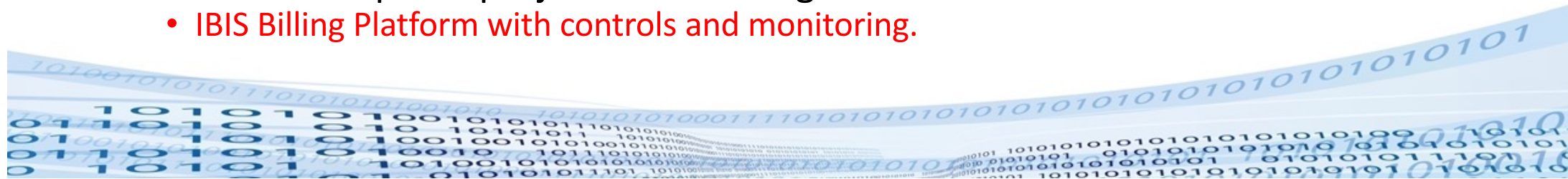
Questions?

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