Centralised Threat Management

ESB Networks

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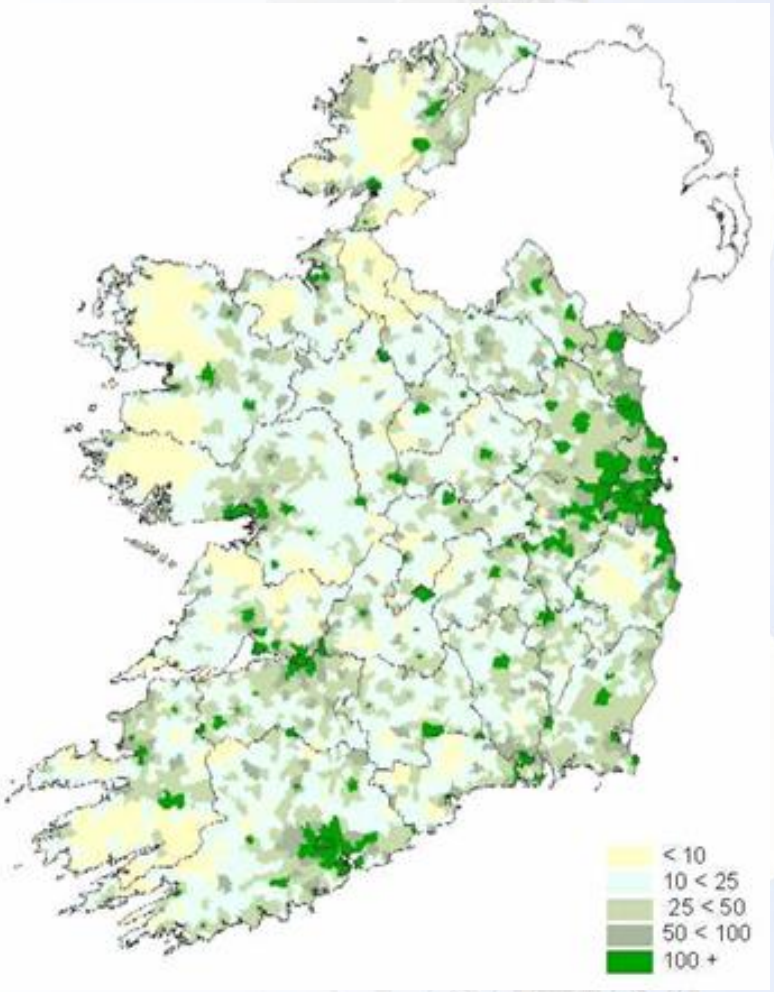
Future Networks

ESB Group:-

- ESB – Generation, Supply, DNO
- Population 4 M - 2,2m Electricity Customers
- Dispersed Population
  - 200,000kM Network
  - 230,000 Transformers
- System Peak: 5,035 MW
- 78% Wind integration
- 30% of daily peak is data



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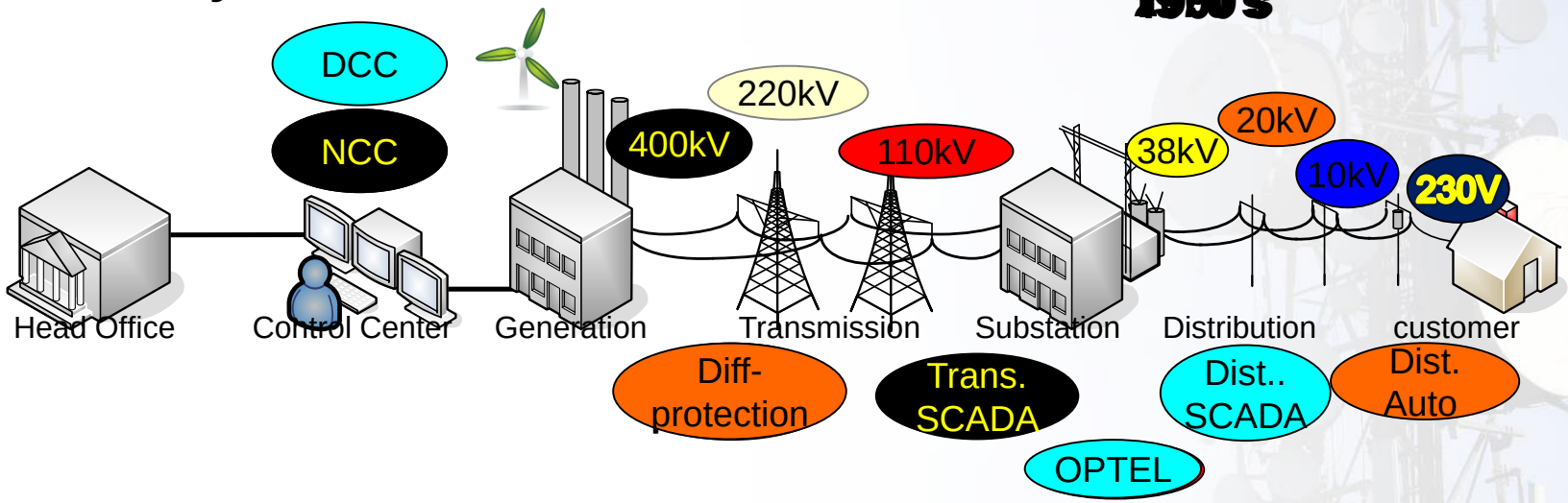
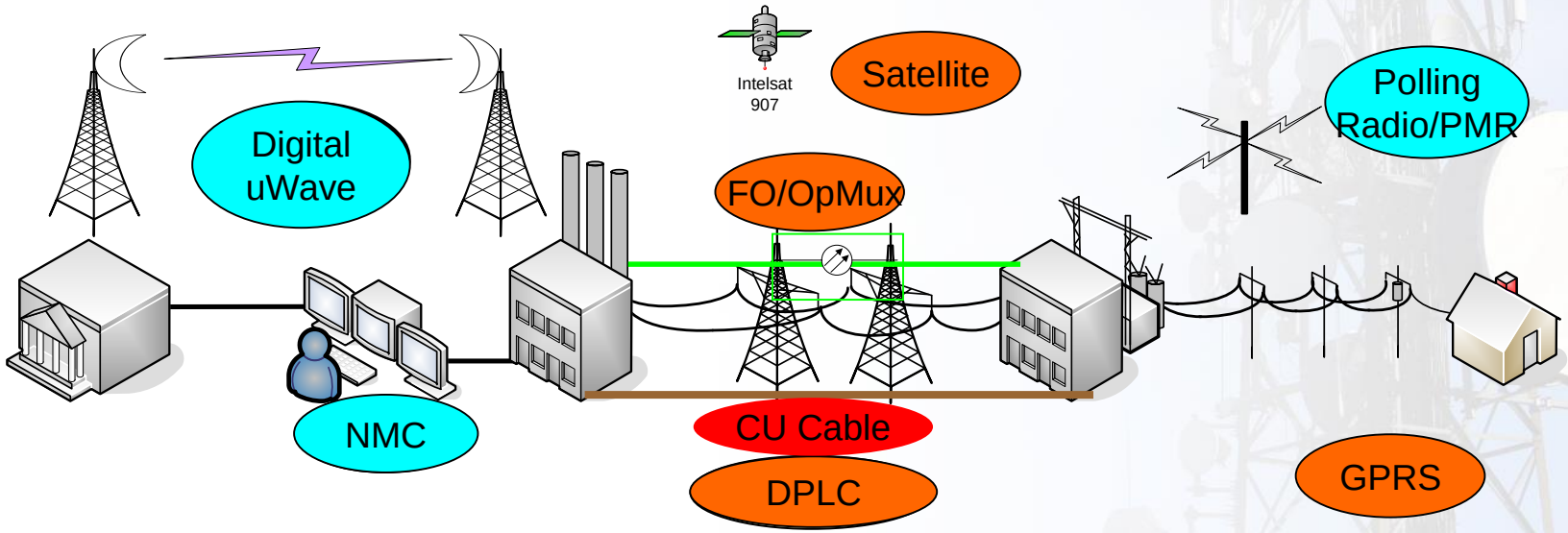
Short History of Telecoms in ESB





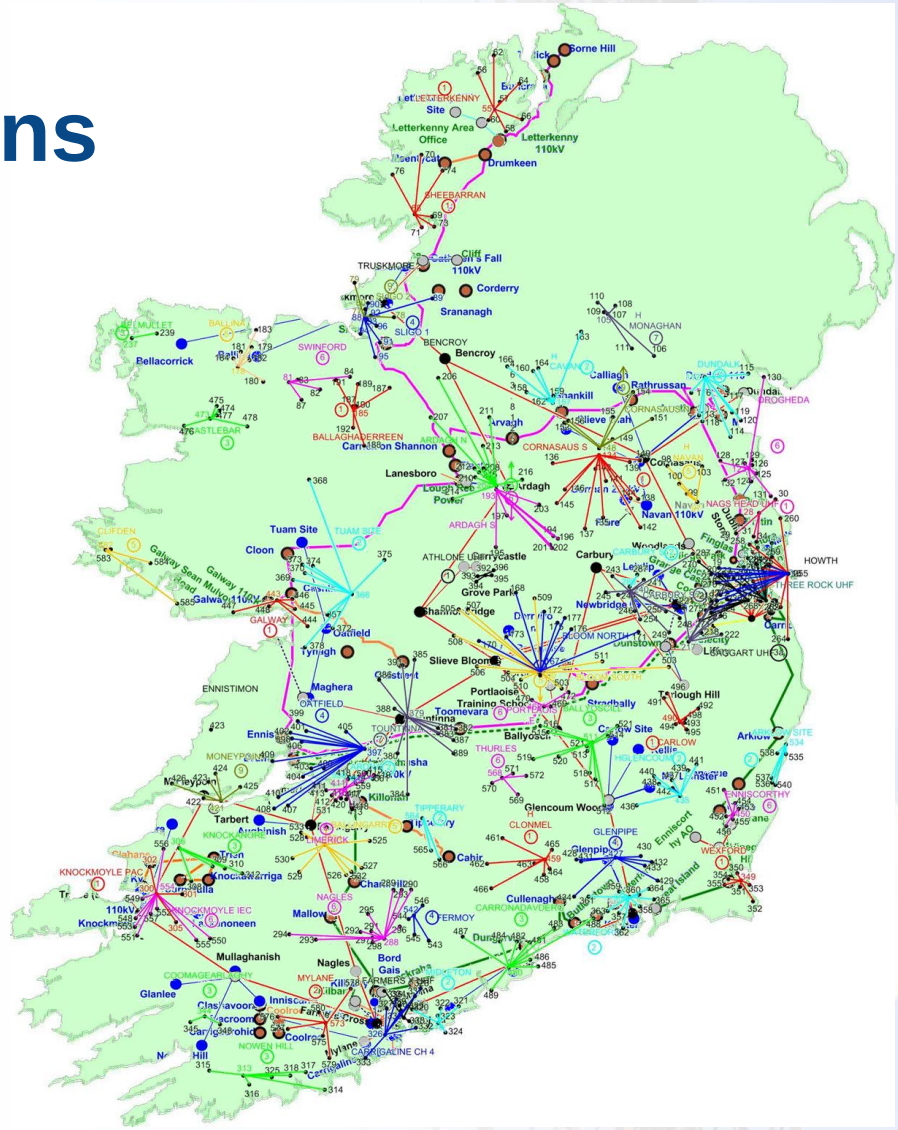
60s 70s 80s 90s 00s

1980's

Communications Infrastructure

Extensive Telecommunications Network Built Up

- Fibre Network
- Microwave Radio
- Polling Radio



Current Grid Requirements

- Power Line Carrier
  - Teleprotection systems
- Point-to-Point Circuits
  - Teleprotection systems
  - OMS
  - TSO SCADA circuits
  - Energy Management Systems
  - Energy metering
  - Event recorders
- Disturbance recorders
- Polling radio network
- DSO Networks SCADA circuits
- OpTel - Operational Voice Services
- Private Mobile Radio
  - Private Mobile Radio
  - TETRA
  - Hand portable Radio Systems
- General site alarms
  - General Station Alarm

Future “smarter” Grid Requirements

- IP based SCADA communications.
- IP enabled polling radio. (also capable of supporting legacy SCADA protocols)
- Enhanced communications for secondary substations.
- Sensor Network communications.
- Smart Grid backhaul.
- Improved communications for energy meters & quality of service monitoring.
- Time distribution using IEEE 1588– alternative to GPS.
- Private IP Mobile Radio Network.
- Physical site security using IP Video surveillance.
- Physical site security using access control mechanisms.
- Smart Metering communications.
- IEC 61850 based communications.
- Smart Metering/AMI(1.4 million urban, 0.8 million rural)
- HV demand response
- Substation & Distribution Automation
- Embedded Generation
- LV control and loop automation
- Demand side management
- Other
  - Emergency Telephony
  - Outage and Fault Management
  - Asset Management and Monitoring
  - Mobile Workforce Management

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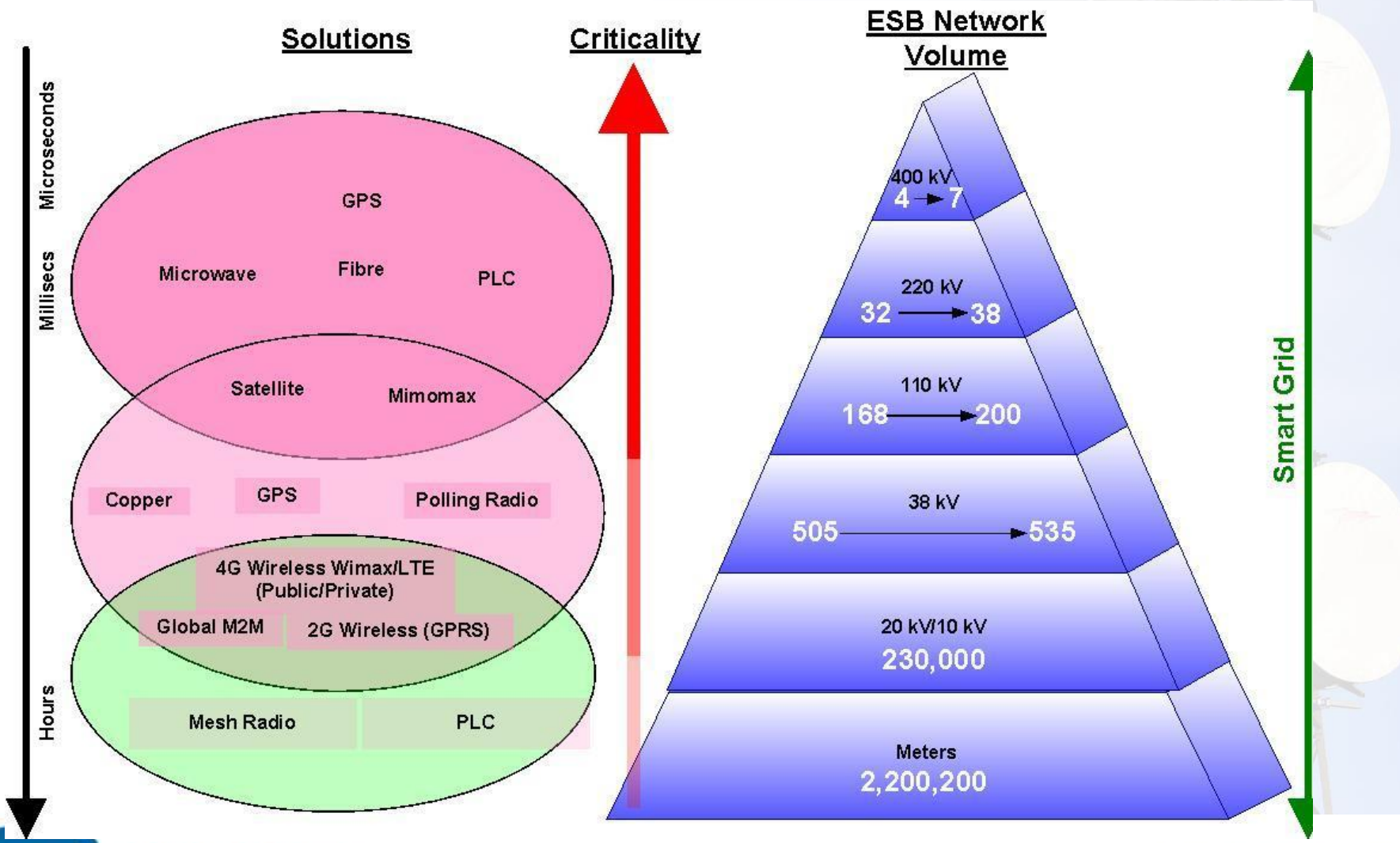
www.esb.ie/esbnetworks

The Communications Challenge



What Exists today?

- Enterprise network – standardised, modular, centralised, understood, high levels of change, medium levels of change control
- Control system Network –decentralised understood but complex, resilient by design, managed 24x7x365, outages are not tolerated
- Operations and Control - centralised understood but complex, resilient by design, managed 24x7x365, outages are not tolerated
- Security and physical site management control

Security to date

- An addition
- A cost
- Useless
- An Inconvenience
- An Overhead

A historical perception of security

- Security is in a silo
- Systems cannot exercise their effectiveness or benefit
- Reporting failed to reflect benefit
- Single use case associated with Security Systems and services

A new approach?

- Introduce mechanisms to monitor, visualise and measure security at all levels
- Integrate security into day to day processes and disperse the function across your organisation
- Create benefit from the integration
- Understand and leverage all opportunities presented by security
- Maintain vision

How do we approach radical change?

- Influence
  - Organisation
    - Legislation
    - Regulation
    - Monetisation
    - Risk … ation
  - User
    - Awareness
    - Best practice
    - Approach

Organisation

- We don’t have to do security… yet
- Safety is a core, Security should be too.
- Take a global view, identify influencers from external points
- Liaise with groups which have influence and ensure organisation is directed in the correct manner
  - Price review - tie security to CI
  - CERT
  - Information Exchanges
  - Government

Users – the weak link?

- Users are not security conscious – no,
- Users are not aware of security in the context of cyber
- Incentivise the contextualisation of security
  - Training – It's the most effective mechanism engine you have
  - Approach
  - Best practice
  - Competance

iSOC – Integration… into what?

- Socialisation of security at all levels within the organisation.
  - Vigilance and consistency are key
  - Drive from a single policy and justify based on common sense, add value by securing employees approach to security outside the workplace
- Day to day processes and existing known centres of strength and excellence
  - Enterprise/Operational NOC's - Physical Security Centers - Operation centers work into their processes and ways of work – create value and incentive
- Communicate with key parties
  - Working Groups - Information Exchanges - Your national CERT – Government - Intelligence groups
- BUILD TRUST internally and externally

ESB's SNOC vision

- Existing Networks Operations Centre
  - Purely customer focused – commercial and internal
  - Efficient operations and incident management – ITIL
  - Incidents and change a realised threat is just an incident
- Connect with everything – leverage operational benefit
  - SNMP
  - SCADA
  - Syslog
  - Reuse and recycle
  - Colocation or collaborative connectivity between all centres
- Connect with people – Build relationships – build trust
  - Government – EPRI – ENISA – ENA – Organisations
  - Internal groups

Effective organisation wide, threat management:

- Organisational awareness
- Secure living and practices in the workplace
- Preparing for failure
- Security providing organisational value
- Enabling vision into process and organisational state

Effective centralised threat management is

- A framework to collaborate
- A platform which seamlessly integrates
- A resource which has value to ALL stakeholders
- Derived from existing organisational strengths

Thank you

ESB Networks
Telecom Services