BRITISH APCO

Working in Partnership to Improve Public Safety Technology

BAPCO Satellite Series

Keeping you connected

NG999 Roundtable: 08 February 2023

Welcome

John Anthony, President, British APCO

Next Generation 999

Darryl Keen, British APCO Trustee

8th February 2023

Intro

- Previously:
  - CFO, Herts FRS
  - NFCC lead for control rooms and comms
  - Chair of the 999LC
  - Involvement in ESN, MAIT, 999SLG, BT NG999

- Now:
  - Retired from FRS – the beard gives it away!
  - Trustee of British APCO
  - 999 representative on EC-RRG and still member of 999LC

- Sessions Today:
  - Excellent speakers, food for thought…

Purpose

- BT have provided a reverse compatible, highly resilient, voiced based NG999 system

- New system, huge opportunity...if we can take it

- At the end of today British APCO will develop a white paper

- Articulating where we have come from, where we are now and what the opportunities are

- To do that we need your views...your views are crucial today!

Challenges

- General Conditions of Entitlement – specifically GC 3 & GC 4 refer to access to the emergency services and resilience...expectations but not a set of instructions

- Government has no contract for the 999 'Service'

- Most ES leaders want it to work, but don't have in-depth understanding

Who holds responsibility? A stakeholder analysis…give me some poetic licence here!

- The caller
  - The public
  - The public's representatives (HMG)

- The 999 call
  - Landlines; BT, K-Com, etc
  - Mobile; MNO's/MVNO's – the contracting parties

- The 999 'system'
  - BT – the contractor

- Effective call handling, emergency response
  - The emergency services

Today – outputs not input

- What is the 999 'system'?

- What works well…most of it really!

- What is changing?
  - New tech
  - New public expectations

- What are the opportunities?
  - BT's NG999
  - New tech…new means of contact

- Risks
  - We build it but can't use it…slow adoption
  - We take too long to achieve critical mass…EISEC
  - Commerce trumps public safety…HMG ambivalence
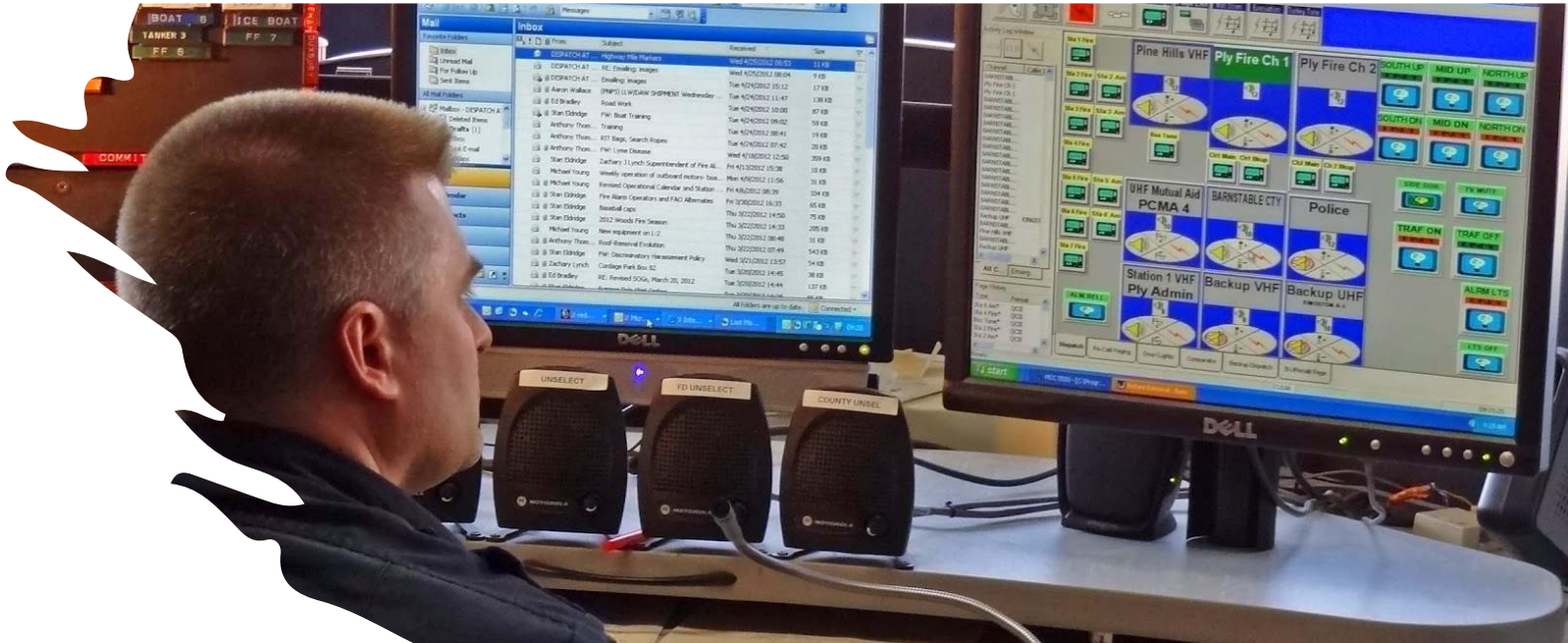
BAPCO NG999 Roundtable

Alan Todd, KPM, Assistant Chief Constable

999/112 Liaison Committee

Members include representatives from;

- **DDCMS**
- **Government Departments – EAs**
- **Devolved Administrations**
- **Emergency Services**
- **OFCOM**
- **BT as Call Handling Agent**
- **Telecom Network Providers**
- **BAPCO**

Purpose

The Committee provides a forum to discuss operational and technical matters arising from the provision of the 999/112 emergency call service. Its main concern is the effective handling of emergency telephone calls between the public, call handling agents and the emergency authorities.

The Committee seeks to ensure that:

- each interest group has an understanding of the needs of the others;

- problems are identified and resolved;

- call handling is efficient and effective;

- there are agreed protocols for the management of calls;

- technical and other developments, including European requirements, are identified and actioned in a timely manner;

- the wider requirements of UK and European law are satisfied;

- opportunities for the development of future emergency call processes or systems are considered and/or identified, and where appropriate these are highlighted to the 999/112 Strategic Group;

- changes to public use of the 999/112 infrastructure are considered, whether that be as a result of technological changes or changing habits, to ensure that the best possible service can continue to be provided.

The most recent Committee Agenda included……

- **DDCMS Update**
- **Electronic Communication Resilience & Response Group (EC-RRG) Update**
- **Emergency Agency Lead Updates**
  - **DHCS – Ambulance**
  - **Home Office – Police**
  - **Home Office – Fire**
  - **MCGA – Coastguard**
  - **Cabinet Office – Emergency Alerts Update**
- **Latest 999 Report/Data**
- **PECS Update**
- **999 Futures**
- **Nuisance Calls/System Misuse – OFCOM Update**
- **EISEC/AML – Are we leveraging the data?**
- **E-Call – What does the data tell us?**
- **App & Device Accreditation Parameters**
  - **Towards Joint Standards**
  - **Working Group Update**
  - **Satellite Communications**
- **EA Resilience Survey**
- **New Products and 999 system access.**

Current Issues

- **999 Capacity and Sustainability**

- **System and Service Resilience**

- **Impacts of New Technologies and Capabilities**

- **Accreditation and Standards**

The Future for Emergency Contact

Police National Contact Management Strategy - Working Assumptions

1. Telephony will continue to be the public's channel of choice for Emergency contact

2. Telephony will continue to be the police's channel of choice for Emergency Contact

3. Emergency Contact volumes will continue to rise, year on year

4. Emergency Contact complexity will continue to rise

5. Emergency Contact handling time will continue to rise

6. Resource budgets will continue to be under pressure

7. Increasing Contact Channels increases Contact Volume

8. Education on System usage does not significantly impact behaviour

So ….. What next……??

Questions, Thoughts, Views, Observations ??

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Next generation 999 calls

An engineering perspective

Will Stewart

HonFIET, FREng, FPSA, FInstP

Tech changes

- All emergency calling is driven by available technology.

    - Approaching a century ago this led to the 999-emergency phone call
    - This has largely transferred to mobiles along with most other calls (landlines have been in decline for some years).

   - So it makes sense to ask what technology is leading to today

Tech changes

- In 2014/5 the IET published a short report on 'Contacting Emergency Services in the Digital Age', which with support from the Cabinet Office and others emphasized the impact of mobiles, in particular the potential for silent text calling and accurate location. These things were widely welcomed and have since helped a good deal. For example:-

  - Chief Superintendent Mark Nottage, who leads the Emergency Services Mobile Communication Programme at the Home Office, agrees that a new data-based emergency service is a priority: "Young people are statistically more likely to be victims of crime or accidents – but they rarely make voice calls in their daily lives. So, making an emergency service call is not something that would feel natural to them. For example, a girl alone in a mini cab who becomes worried about her personal safety might feel unable to make a call on her mobile phone – but could send a text or alert someone over social media

Tech changes

- But a lot has happened in the last decade so what is possible now?

    - Firstly, mobiles and linked tech devices, especially wearables, know a lot more about us now and this can be of considerable value
    - Secondly, modern devices can make it much simpler to call for help, or even call autonomously
    - Thirdly – less obviously but as importantly – improved data analysis of considerably increased data can spot things that may need attention, and put together vital information

Knowing more about us
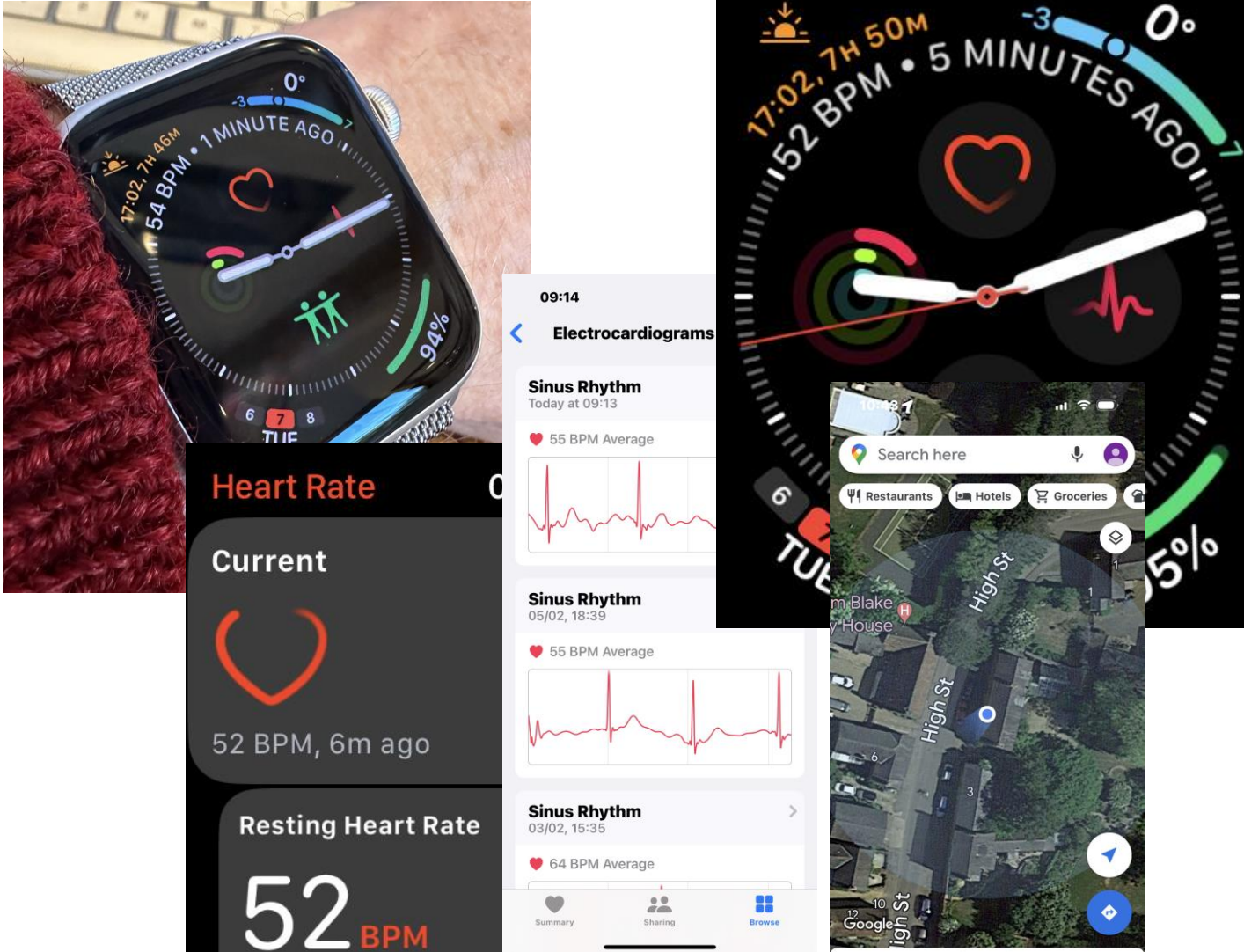
- The list of what our devices know is very long
- Precise location
- Heart rate/ecg…
- Health history
- Location history
- And much else.

Much simpler to call for help

- For example, single-button emergency call – which can be voice activated and call automatically if there is no follow-up.

- The degree to which a call is 'silent' can also be live controlled
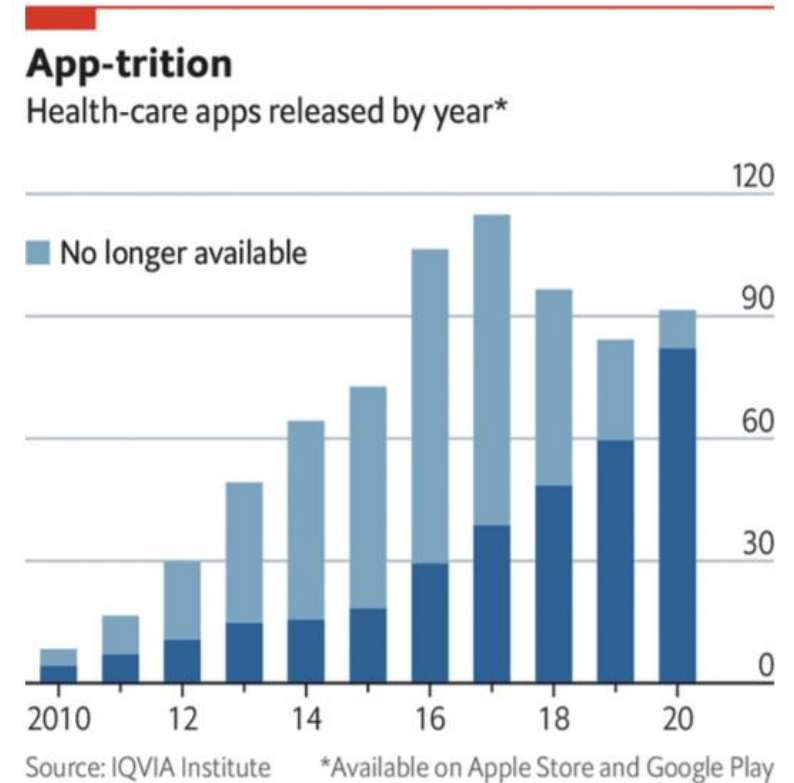
- And of course, one can text

Autonomous calls for help

- Fall detection
- Crash detection (based on accelerometers)
- Currently asks for a response – no response then 999
- Similar eCall system in cars standard
- Not current for heart attacks but perhaps could be
- Could respond to other standard alarm signals like screaming?

Improved data analysis

- This is easy to overlook. It can be local via an app
- Or involve data analysis including health data from NHS or longer-term movement data to track behaviour changes
- This is likely to be AI in part, but this is not a concern as such. But there are privacy issues
- Emergency calling integrated with wider health management
- And with wider area awareness

App-trition
Health-care apps released by year*

■ No longer available

120

90

60

30

0

2010   12   14   16   18   20

Source: IQVIA Institute   *Available on Apple Store and Google Play

Economist

2015 report

- The function of these services all depend critically on the changing interface to the user/caller and the way people will react to it - consideration of this needs to be part of any action.

- New interfaces and data handling capability can also be very helpful in increasing efficiency at the 'supplier' end of these services. For example, it is much easier for a machine to deduce useful triage information from text input. And there is the need to provide compatible/interworkable systems for the emergency services themselves.

2015 report comments

This is all still true, but the available data, sensors and processors have improved drastically.

For example, there is now a lot of video data available, plus local conditions from temperature to pressure (altitude) at sub-m accuracy in addition to movement history and live health.

Typical data downloaded from/to smartphones is also rising exponentially

And social media as a source
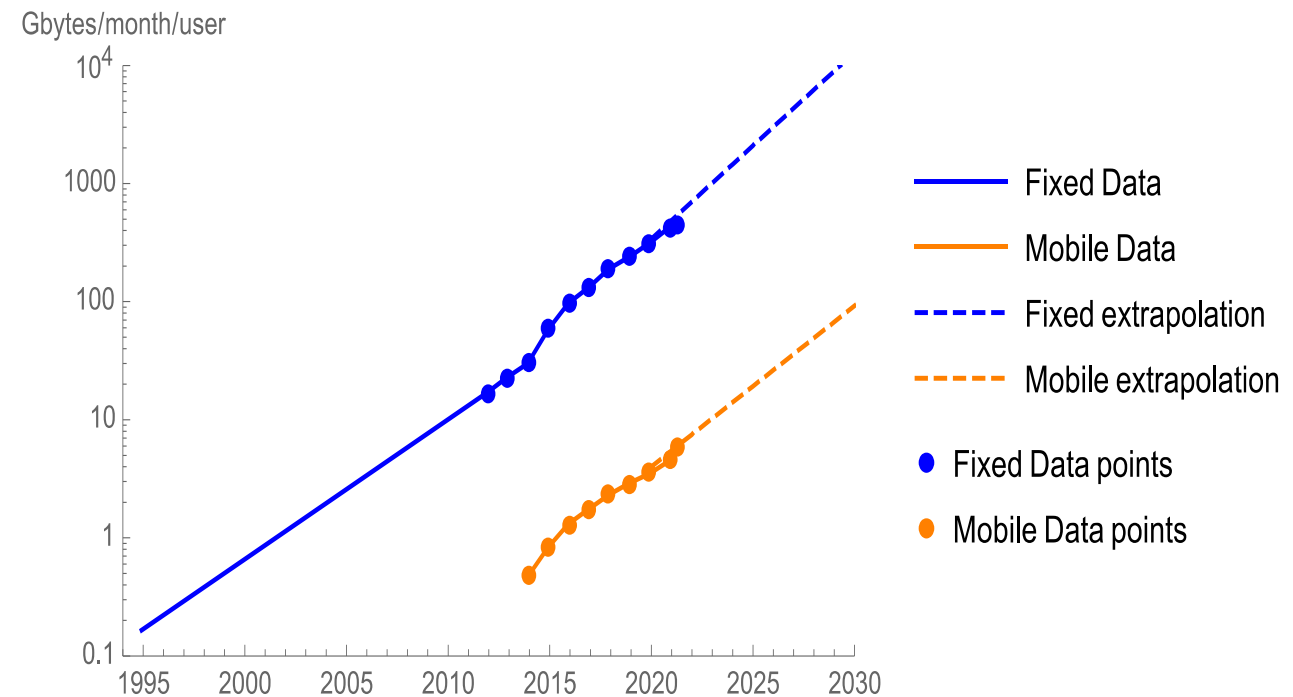

Ofcom

Tech changes – what next?

- A lot more data will be available
- Simply gathering this and interpreting it into useful information quickly enough to help will be challenging – it needs advanced AI
- Getting or legally assuming access needs to be done in advance (like location)
- User involvement and privacy checking needs attention
- Machine/AI triage needs looking at

- And the tech will not stop. Key trends that will matter are:-
  - Ever more powerful local/device processing (e.g., local AI, for speech understanding for example)
  - Better machine understanding of video images
  - Incorporation/integration of data-heavy external devices like autonomous vehicles
  - Heavy capacity local comms (including optical) and peer-to-peer

Tech is cheap! (& getting cheaper)

Examples:-

Temp sensor < £1
Includes unique ID, comms management, temp sensor, A-D conversion

Twinkly programmable tree lights – 250 individually addressable, changing brightness and colour
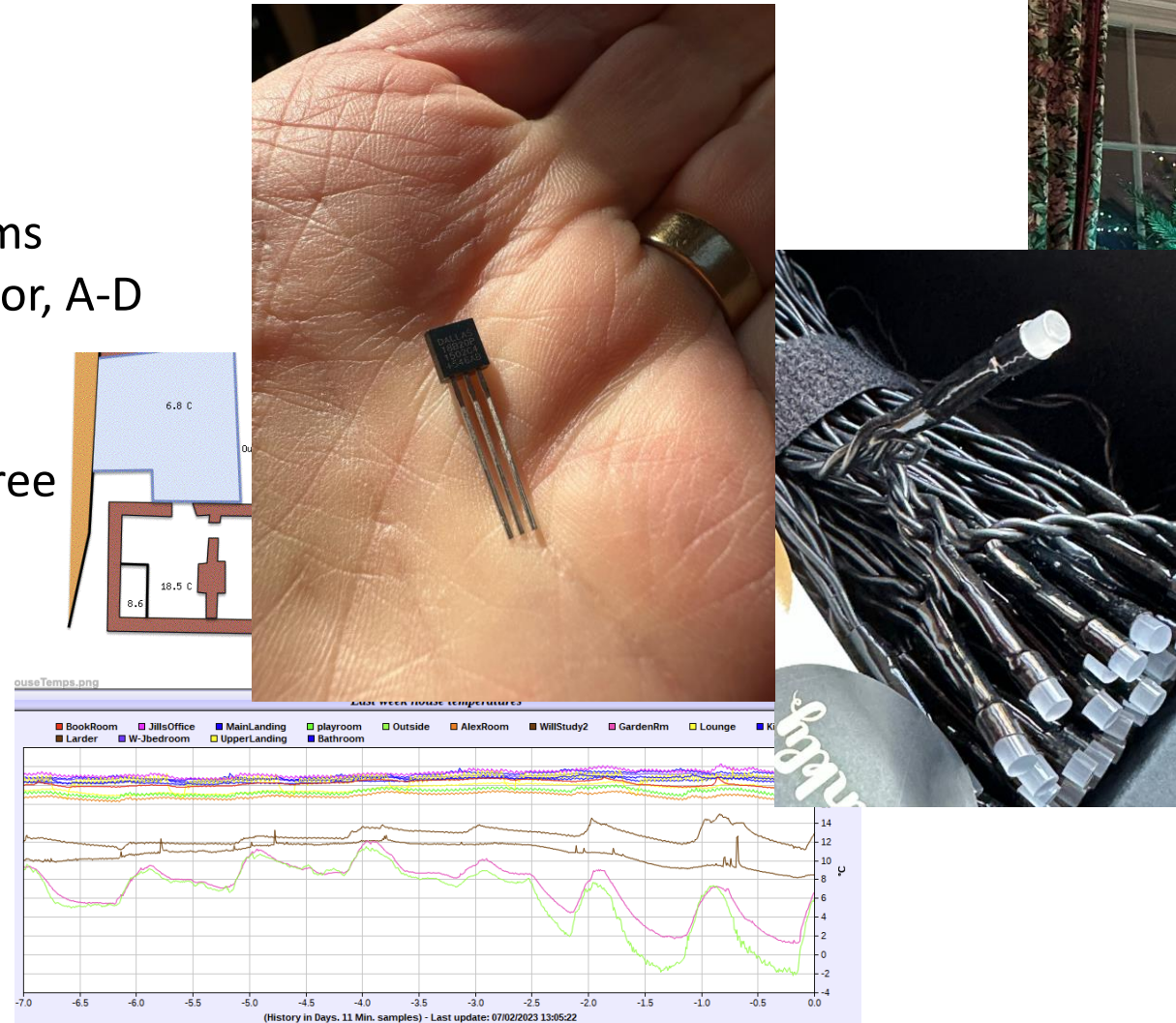
Single Emergency Number

- Single Emergency Number available since 1937
- The prominent medium of communication is voice
- Small changes but the voice have remained constant since the inception of the single emergency number
- Could the provision of data help the process of accessing an emergency response?

eCall designed by the emergency services for emergency services

- What can eCall data give you?
  - The minimum set of data (MSD) gives you:
    - Date Time
    - Location
    - Previous two locations
    - Direction of travel
    - VIN
    - Fuel Type
    - Manual or Automatic Activation
    - Additional data
      - Number of passengers

eCall and BT 999

- BT 999 screen the calls and only place those requesting emergency services to the service asked for.
- Data from eCall was made available via EISEC.
  - Existing EISEC BT 999 cannot decode all the MSD data
  - Data must be drawn down by the call taker from EISEC within 30 minutes

EISEC

- The new version of EISEC coming online very soon
- All emergency services now subscribe to EISEC
  - This is a service paid for by the emergency services
  - Multiple forms of data placed on EISEC, not just eCall
  - Only available to Blue Light Services NOT emergency responders
    - National Highways,
    - Road Safety Investigation Branch

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Why use data?

- Data can provide an accurate location (Including AML)
  - Last two locations
  - Direction of travel
  - Accuracy improving
- Vehicle identification
- Fuel Identification
- Occupants

Operationally What difference does this make to the response?

Why does this all matter?

- eCall is the start of machine-originated calls Emergency Services need to get used to these types of call
  - iPhone and Google Pixel
  - Apple Watch/Samsung watch
  - Data is already here, and the volume and complexity are increasing
  - This is now commercially driven

What else to do with data?

- Fast time
  - Enhanced response exact location detailed
    - Consider revising the deployment strategy because sending two separate resources where one could be sufficient
  - Vehicle type known
  - Fuel known
  - Passengers known
- Slow time
  - The key to slow time is
    - Additional data sets to overlay
      - Weather
      - Traffic flow
      - Events
      - Other incidents
      - Vehicle type
      - Past events

So, what is going wrong?

- Initial investigations have shown that the utilisation of data pertaining to a single emergency number is not as it should be (Now confirmed by BT)
- If we cannot handle/use either eCall or AML data which in real terms are minimal data sets what chance do the emergency services have to handle more complex data?

Thank you

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Operation Willow Beck (FRS)

Mandy Dixon, UK Home Office

Operation Willow Beck

Mandy Dixon

Home Office – Fire Control Project Manager

Operation Willow Beck

- Pilot started 4th April 2022
- Home Office, NFCC, BT collaboration
- National call redistribution plan for the fire sector
- Available to all fire controls in England, Scotland and Wales
- Resilience
- Mutual aid

Operation Willow Beck - background

- July 2021 – London floods
- 999 system under pressure
- Aim
  - To protect the 999 system
  - Reduce 999 call delays
  - Quick access to a call redistribution plan
- Collaborative approach
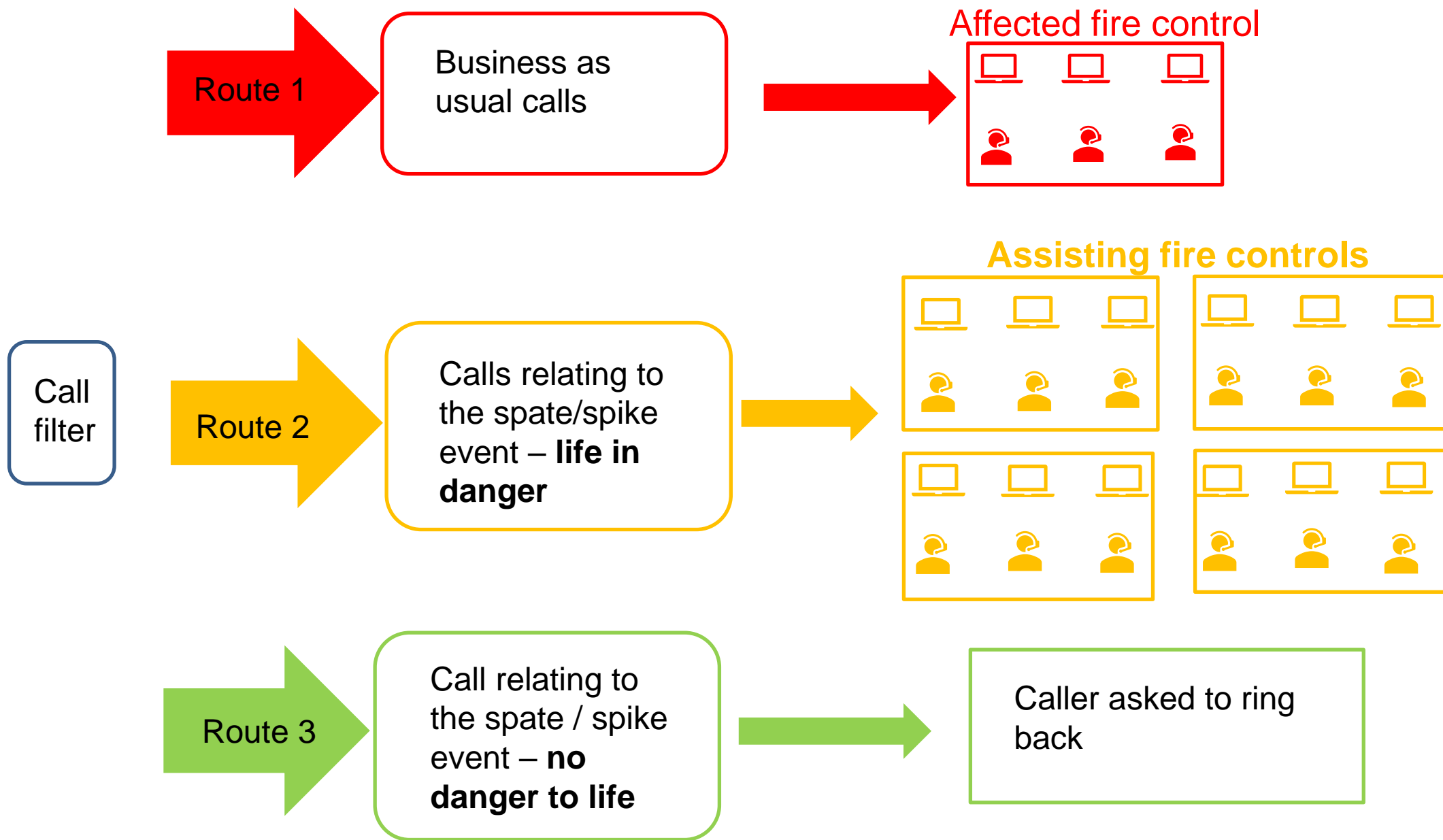- PECS Code of Practice
- Procedure developed and tested

National redistribution plan

- 37 fire controls
- Individual plan for each fire control
- Each fire control takes a 'percentage' of calls
- Opting out
- Incidents returned back to the host control
  - High priority
  - Low priority

Home Office

FRS control instigating Operation Willow Beck	Percentage of calls distributed by the call handling agent to assisting fire control rooms																																			
	Avon	Bedfordshire	Cambridgeshire and Suffolk	Cleveland	Cornwall	Derbyshire and Nottinghamshire	Durham and Darlington	Essex	Hereford and Worcester	Hertfordshire	Humberside	Gloucestershire	Leicestershire	Lincolnshire	London	Merseyside	Networked Fire Services Partnership	Norfolk	North West Fire Control	North Yorkshire	Northamptonshire	Northumberland	Shropshire	South Yorkshire	Staffordshire and West Midlands	Surrey, West and East Sussex	Thames Valley Fire Control Service	Tyne and Wear	Warwickshire	West Yorkshire	Mid, South and West Wales	North Wales	Scotland - Dundee	Scotland - Edinburgh	Scotland - Johnstone	TOTAL
Avon		1	2	1	1	5	1	3	1	2	2	1	2	2	12	3	8	2	5	1	1	1	1	3	5	5	5	3	1	3	2	2	3	5	5	100
Bedfordshire	2		2	1	1	5	1	3	1	2	2	1	2	2	12	3	7	2	5	1	1	1	1	3	5	5	5	3	1	3	2	2	3	5	5	100
Cambridgeshire and Suffolk	2	1		1	1	5	1	3	1	2	2	1	2	2	12	3	8	2	5	1	1	1	1	3	5	5	5	3	1	3	2	2	3	5	5	100
Cleveland	2	1	2		1	5	1	3	1	2	2	1	2	2	12	3	8	2	5	1	1	1	1	3	5	5	5	2	1	3	2	2	3	5	5	100
Cornwall	2	1	2	1		5	1	3	1	2	2	1	2	2	13	3	8	2	5	0	1	1	1	3	5	5	5	2	1	3	2	2	3	5	5	100
Derbyshire and Nottinghamshire	3	1	2	1	1		1	4	1	2	2	1	0	2	12	3	8	2	5	1	1	1	1	4	6	5	5	3	1	4	2	2	3	5	5	100

51

999 call For FRS

Call filter

Route 1 → Business as usual calls → Affected fire control

Route 2 → Calls relating to the spate/spike event – **life in danger** → Assisting fire controls

Route 3 → Call relating to the spate / spike event – **no danger to life** → Caller asked to ring back

52

Comparison

London floods, 12 July 2021	Summer heatwave, 19 July 2022
London Fire Brigade	Across the UK
Over 2,100 flooding related calls	13,000+ fire calls (600% increase)
Ad-hoc call redistribution	Operation Willow Beck requested by 5 fire controls
Buddy fire controls overwhelmed	Calls shared between 33 fire controls
Buddy support gained 1 at a time	Instant access to buddy support
National 999 network overwhelmed	National 999 network protected

Home Office

Operation Willow Beck - Benefits

British Telecom

Immediate access to fire controls who can assist

Does not overload single controls

Pre-determined re-distribution plan

Affected Fire Control

Quick access to additional support

Standardised method of receiving incidents

Filter out non-urgent or repeat calls

Assisting Fire Control

Ability to assist or opt out

Standardised method of receiving calls

Standardised method of returning incidents to affected control
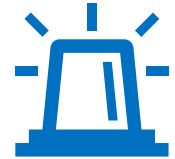
Other Emergency Services

Prevents unplanned redistribution to other ES

BT able to answer and connect calls

Connection of urgent calls (e.g. severe medical conditions)

Home Office

Feedback from British Telecom

"Key benefit was not having to contact other fire services when normal buddies can no longer cope. This can take a great deal of time."

"During the floods in London (July 2021) delays were increasing and extra buddy support was required. The lead centre had to gain support one at a time, which resulted in the new service getting many calls until the next buddy was agreed."

"On 19th July 2022 although the pressure was still there, it was calmer and we instantly had many buddies, so the load could be spread."

"Services who rang in to opt out was more efficient than the Lead Centre finding out ad hoc."

Home Office

Feedback from fire controls

"We didn't declare Willow Beck, but assisting seemed simple enough. It gave us an idea who was busy across the UK."

"Having a nationally agreed procedure and recognised code word ensured procedures were initiated quickly."

"NTG20 highlighted the significance and spread of the situation across the UK."

"Willow Beck is a fantastic idea that gives confidence to all controls that additional support is there if needed."

Home Office Office

Learning

- Situational awareness
- Understand source of call volumes
- Other methods of handling multiple calls e.g.
  - Buddy controls
  - Pausing buddy arrangements
  - Call filtering
- Multiple requests
- Learning across the sector
- MAIT - Multi agency incident transfer

Home Office

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Table Exercise

Welcome back

- This morning we touched on the current system and the issues the 999 'system' is facing

- Now, what are the opportunities and how will we exploit them?

Stakeholders – a reminder

CP's

- Landline and MNO's

BT

HM Government

System Suppliers

So, your Challenge for this Afternoon is...

- What are the opportunities?
- What are the priorities?
- How do we avoid the "EISEC problem"?
- Who is/are our "target audience(s)?"

The Evolution of the Telephone

| ...al | Phone Box | Push button | Space-saver | Cordless | Mobile | Less brick mobile | The Smartphone |
| 19 | 1920 | 1964 | 1965 | 1970s | 1990 | 1990 | 2011 |

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Industry Presentations
RapidSOS - Jessica Reed

BAPCO NG999

RapidSOS

Connecting the world to Emergency Services

RapidSOS

Agenda

I. **Why are we talking about NG999**

II. Where do we see the opportunity for NG999 in the control room

III. Operationalising data in the control room

The UK faced 35M+ emergencies in 2022[1]

And that number is growing

Climate change

Wildfires, hurricanes, floods - 8x growth in natural disasters in the last 40 yrs

Medical emergencies

16M+ A&E visits in England in '22[2]; Global Pandemic

Aging population

UK 65+ population to increase 25% by 2050[3]

Violent crime

32% increase in sexual offences, 25% increase in homicide in England and Wales over the past year[4]

(1)   Guidance: 999 and 112: the UK's national emergency numbers, Department for Digital, Culture, Media & Sport, Department of Health and Social Care, and Home Office
(2)   NHS Key Statistics: England, November 2022, Carl Baker, House of Commons Library, 17 November 2022
(3)   Resident population projection of people in the UK for 2020 to 2050 by age group, Statista, 24 February 2022
(4)   Crime outcomes in England and Wales 2021 to 2022, Home Office, 21 July 2022

Increasing number of connected devices

8.6 billion

IoT connected devices in 2019

15.1 billion

IoT connected devices in 2023

23.1 billion

IoT connected devices in 2027

29.4 billion

IoT connected devices in 2030
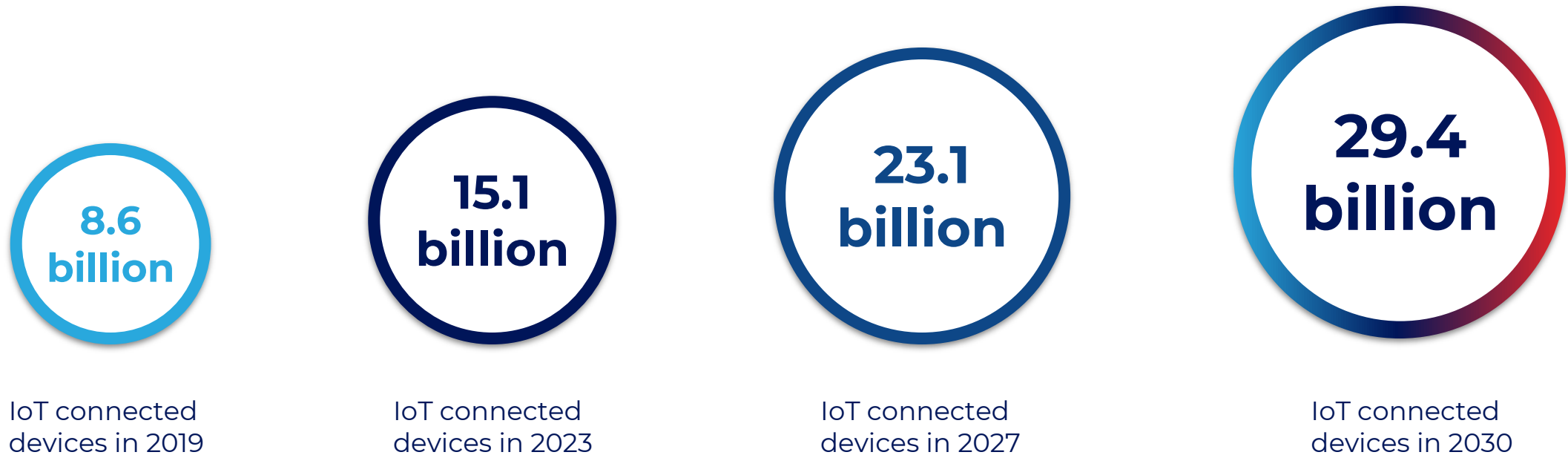
Tech companies want to provide enhanced safety solutions to their end users by sending data to 999 and field responders from connected devices

Agenda

I. Why are we talking about NG999

II. **Where do we see the opportunity for NG999 in the control room**

III. Operationalising data in the control room

The opportunity: *Relevant* situational awareness data alongside incoming 999 calls
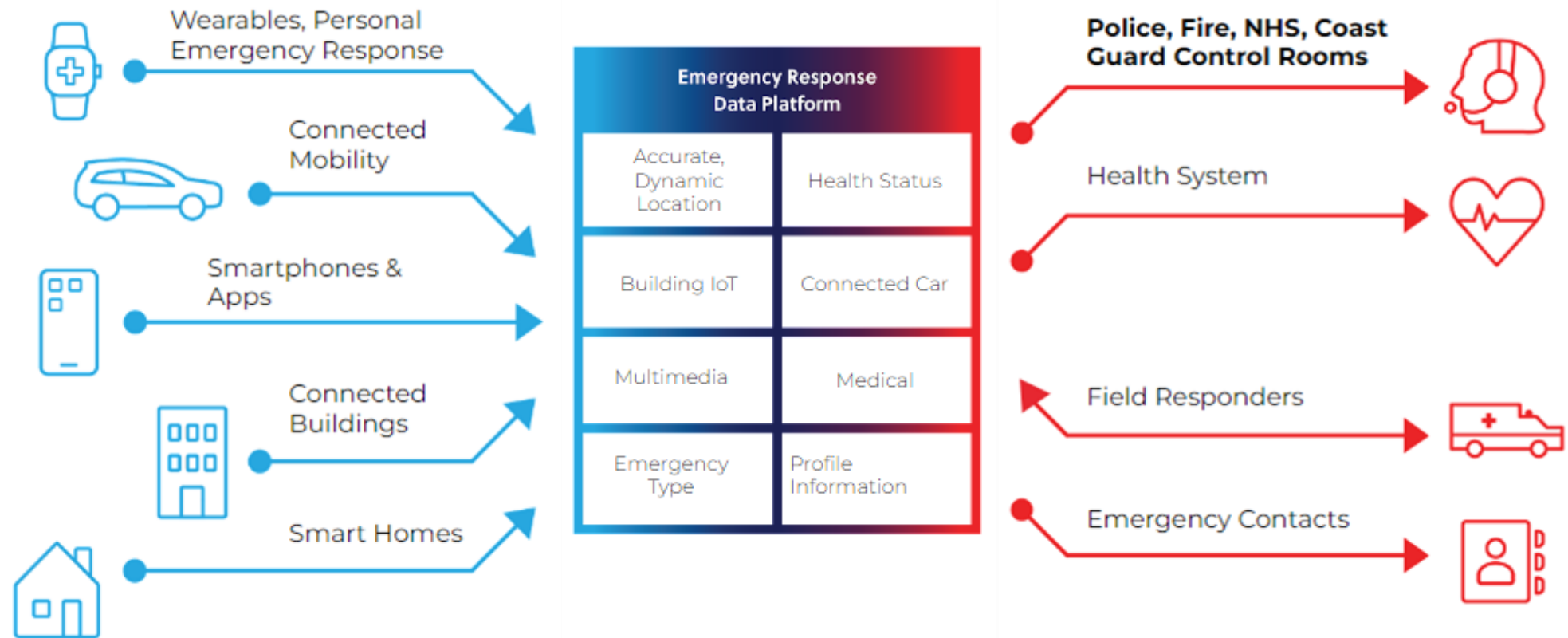
Empowering control room operators with actionable emergency intelligence data

Key data sources

Type of emergency	Real-Time					Static		
	Location: lat/long, elevation	**Health status**: heart rate, blood pressure, SpO2	**Building IoT**: temperature, smoke density, CO toxicity, motion sensor flag, humidity	**Connected Car**: air-bag deployment, velocity, collision event, road conditions	**Multimedia**: photos, video, text message	**Identification**: name, email, phone number, emergency contact details	**Demographics**: gender, age, ethnicity, height, weight	**Medical**: medical conditions, disabilities, medications
Smart Phones	✓			✓		✓		✓
DIY / Security	✓		✓		✓	✓	✓	✓
PERS	✓	✓			✓	✓	✓	✓
Medical PERS	✓	✓			✓	✓	✓	✓
Telematics	✓			✓	✓	✓	✓	✓

How it works

Partner Integrations
(Call handling equipment,
CAD, mapping, RMS)

+

RapidSOS Portal
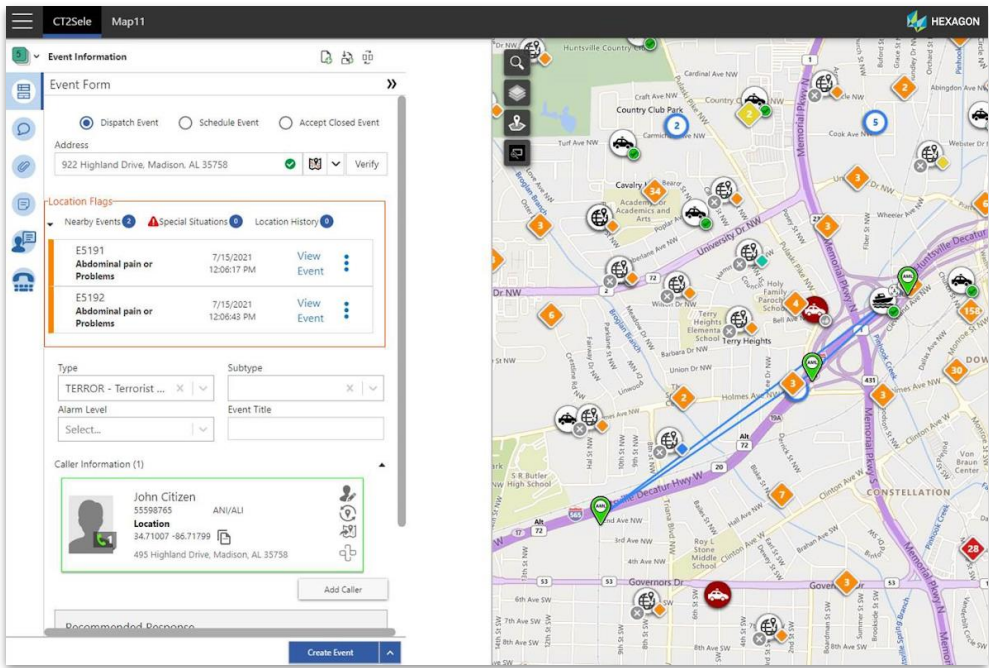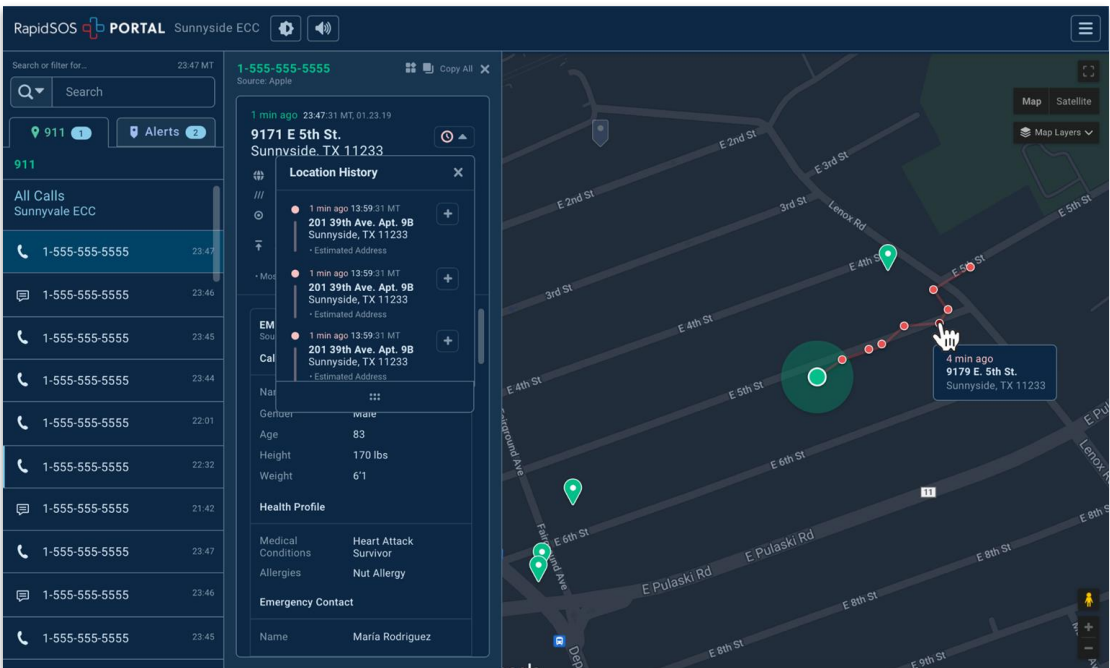
Accurate dynamic location and MedicalID data

Impact of situational awareness data on emergency outcomes

55%
Faster dispatch[1]

7-10%
Reduction in mortality per minute saved[2]

20%
Reduction in fire damage per minute saved[3]

(1)   Henderson County Emergency Simulation, SiriusXM Connected Vehicle Services
(2)   American Heart Association
(3)   RapidSOS Outcomes Whitepaper written with researchers from MIT and Harvard

Agenda

I. Why are we talking about NG999

II. Where do we see the opportunity for NG999 in the control room

III. **Operationalising data in the control room**

Operationalising data in the control room

Training

- Combination of in-person and virtual training

- Trained telecommunication after testing period

- Periodic new training modules for new data sources and product features

Standard Operating Procedures

- Log into solution at the beginning of each shift

- Query for additional data on every wireless and VoIP call (if not automatic query)

- Consistent format for inputting additional data into CAD

Quality Assurance

- Review call audio for implementation of additional data

- Review CAD logs to ensure additional data is present and entered in the proper format

- Follow up individually with telecommunicators to ensure they are following policies

Thank You

Let's work together to transform emergency response.

Jessica Reed
jreed@rapidsos.com

Futureproofing Blue Light Command and Control

Michael Tunnicliffe

07/02/2023

Agenda

- What is futureproofing?
- Stages of future proofing
- Futureproofing 999
- Awareness
- Context
- Analysis
- Decision
- Summary

What is futureproofing
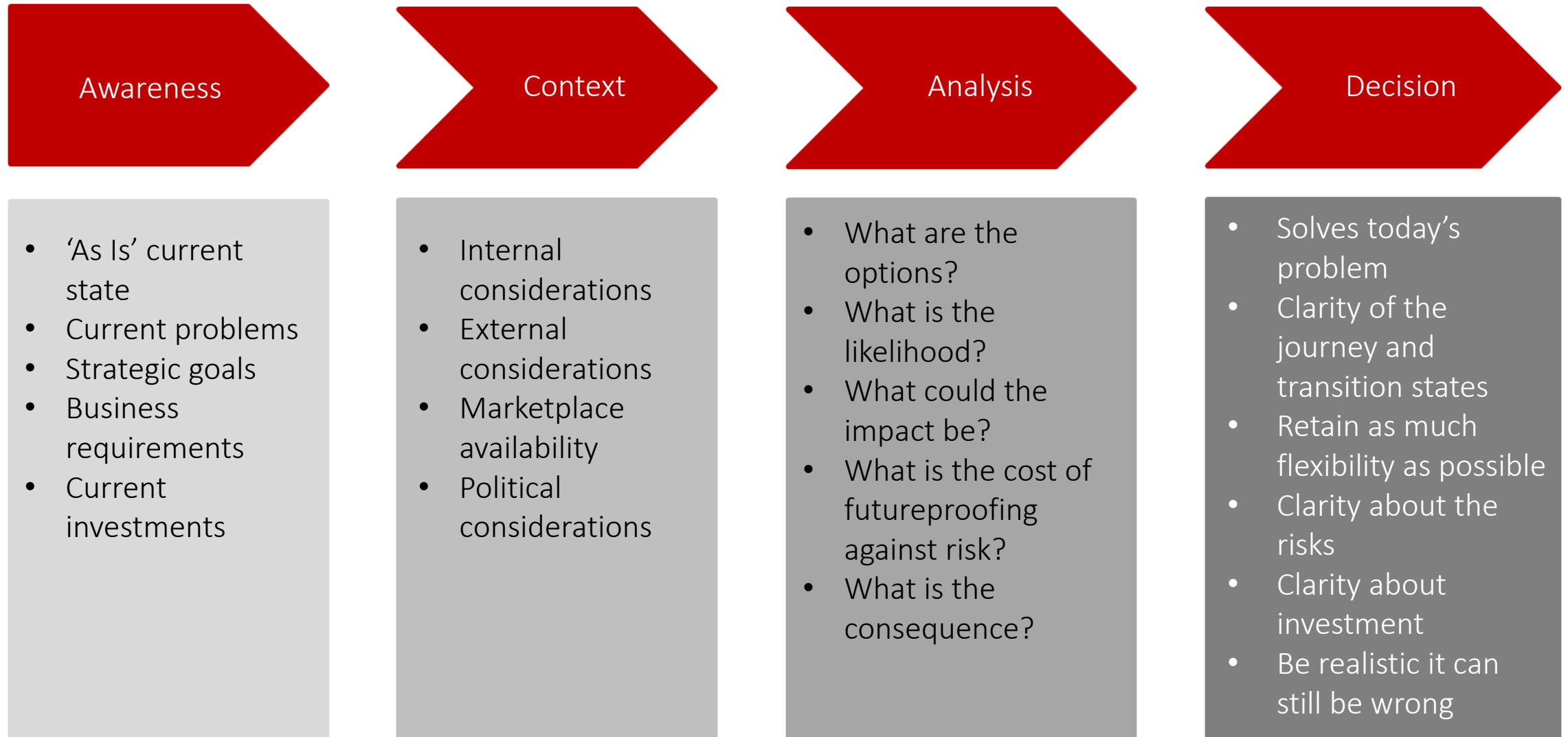

Misconceptions futureproofing is not just:

- Minimising the effects of shocks and stresses due to future events;
- Focusing on simplification e.g. adopting low code;
- Reducing cost;
- Removing risk;
- Solving today's problems.

Futureproofing is:

- Creating solutions for an organisation that will not break as the landscape changes and can evolve over time, shifting to meet users' needs and wants without requiring significant re-investment.

Stages of futureproofing

Awareness	Context	Analysis	Decision
• 'As Is' current state • Current problems • Strategic goals • Business requirements • Current investments	• Internal considerations • External considerations • Marketplace availability • Political considerations	• What are the options? • What is the likelihood? • What could the impact be? • What is the cost of futureproofing against risk? • What is the consequence?	• Solves today's problem • Clarity of the journey and transition states • Retain as much flexibility as possible • Clarity about the risks • Clarity about investment • Be realistic it can still be wrong

Futureproofing 999

Command and Control (C&C) systems associated technology and data are mission critical, meaning they are essential to the delivery of emergency services.

If a mission critical system fails or has any interruptions, business operations are significantly impacted – resulting potential threat to life.

The challenges of operating a mission critical environment are:

1.) Connectivity
2.) Accessibility
3.) Reliability
4.) Security

Challenges of change are amplified for the introduction of any new process or application in an operationally critical environment meaning additional risk and consequences of failure.

Awareness

What should be considered:

- Historic ecology as this may mean future development is difficult to be built on
- Legacy design may incoherent and not recorded
- Conflation of objectives and requirements from users and leads
- Set redlines e.g. preference for voice communications will remain
- Multiple different ways of doing the same thing in different environments
- Different focuses by organisations based on perceived local variations
- Desire for significant service expansion e.g.
  - Visual calling
  - Media uploads
  - Messaging

Requirements of this stage:

- Work to map the current state and ensure we understand the objectives and business requirements irrespective of the technology, ensuring you know what outcomes you are trying to achieve
- Understand the technical limitations of 'As-Is'
- Be able to define the current problems and gaps
- Be clear on the current redlines to ensure they are understood

Case Study: Fire service 1
Actica conducted a review and options appraisal for the future delivery of its C&C system, previously provided by the associated Police Force. Actica conducted a high-level review of existing solutions in place, together with context and commentary around successes and pain points.

Context

What should be considered:

- National capabilities and products e.g. ESN, NLEDS, PNC etc
- Local initiatives partnership e.g. Police-Fire collaborations for C&C
- Statutory requirements for data (GDPR), security and use e.g. MoPI requirements for policing
- Boarder estate technology roadmap e.g. BT moving information to the cloud and the interaction this will require in emergency service to work with this
- Organisational strategy e.g. data analysis use
- National strategy
- Police crime plans

Requirements of this stage:

- Define the capabilities solution elements some of these may provide
- Identifying the requirements these impose on the organisation
- Identifying the consequences due to participation
- Identifying contextual requirements (local vs national strategic direction) conflict to inform risk and dependency considerations

Case Study: Nationwide transport operator
In developing complimentary technology for the integration of coms and ESN we built in requirements, the operator's own requirements and considered the users but also sourcing strategy with suppliers and interfacing between this and technology solutions.

Analysis

What should be considered:

- Data processing and security requirements e.g. new data sources, handling processing and usage
- Organisational appetite to migrate to more cutting edge technology e.g. C&C migration to the cloud off-premise
- Organisational financial investment and sustainability
- Business continuity planning
- Current contracts
- Current pricing schedules
- Potential collaboration solutions
- Additional national funding
- Alignment of timescales of national capabilities against options available
- Does the solution exist? Can you see it elsewhere?

Requirements of this stage:

- Developing relevant SWOTs to support solution options assessment and comparison
- Being clear on the options available with an assessment of applicability and viability, what this would mean and the impact.
- Understanding organisation appetite for the relevant solution/s
- Identifying relevant market and comparable organisation comparisons

Case Study: Fire service 2 and 3
Options appraisal for CAD and ICCS delivery with consideration for the optimal degree of collaboration. We provided recommendations to enabling further strategic collaboration including implementing several critical technologies (e.g., cloud, VoIP & ESN).

Decision

What should be considered:

- Current investments and their ability to assist identified
- Making sure the governance and responsibility for making decisions is clear and appropriate
- Ensure senior leaders and decision makers are well informed and understand the first three stages
- Ensure the choices senior leaders have to make are clear and concise
- Realistic decision making not perfect solutions

Requirements of this stage:

- Clear decision making
- Choosing the most appropriate option which delivers strategy but considers all elements
- Retaining as much flexibility as is possible
- Inclusion of decisions in the risk corporate risk register and their ownership
- Ability to progress to sourcing, planning and delivery

Case Study: Large police force

Supported decision making in investment through assessing the suitability of using existing current ICCS environments to support ESN test/validation, from early testing through to formal integration, test, pilot and go-live.

Summary

That to futureproof, an organisation needs to :

1. Understanding the 'As-Is' context and issues which need solving today and not loosing sight that transformation is a journey;

2. Have a strategy and roadmap linked to its outcome and goals;

3. Understand the broader context including national programmes and how they relate locally in the requirements, responsibilities and consequences;

4. Be provided with options which inform and allow comparison and consideration based on outcomes, risk, dependencies, costs, benefits and consequences;

5. Make informed decisions but be realistic that futureproofing is a principle leading to a set of continual risk based solutions and decisions supporting the creation of a landscape able to evolve over time not remain static.

INCLUTECH

MAKE . IT . BETTER

Non-verbal emergency reporting technology that:

Protects
Preserves
Predicts

INCLUTECH

TIMELINE

preparation for Wake2016 999 App Certification Scheme Launch

2017 Spread the story...

2018 Tech Showcase BAPCO

2019 DCMS 999LC accreditation for all four EMS

2019 BAPCO NG999 Round Table RAG Club

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TIMELINE

2019 BAPCO NG999 Round Table RAG Club

2019 Meet up with our friends at RapidSOS HQ New York

2020 - well we all know what happened that year

2021 MADRID ICC Awards
Winner Best Use of Technology

2022 Winner of Security & Policing
Innovation Award Farnborough

2023
Watch This Space

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CHALLENGE AND OPPORTUNITY

28 million UK adults have characteristics of vulnerability

12 million
Hearing loss

15 million adults
Mental health

7 million adults
Poor literacy

14 million
Disabled

CORE VALUES

Equality

Accessibility

Inclusivity

Communication

INCLUTECH

SOLUTION

INCLUTECH

TapSOS

- Non-verbal 999
- Icon based
- All four services
- Government approved

TapDA

- Discreet & Disguised
- First point of contact
- Distributed by Police
- Able to meet demand

TapGAS

- Digitalised 0800
- Guided reporting
- Smart triaging
- Concurrent access

TEAM

Becca Hume
Founder & CEO

Les Hume
COO

Dr Jonathan Sinclair
CTO

Paul Loy
Full Stack Engineer

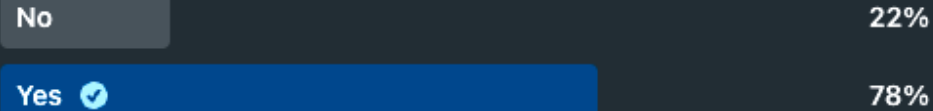**Stephen Crimmins**
UX/UI Senior

Anna Letman
UX/UI Junior

INCLUTECH

PERSPECTIVE OF THE CITIZEN

Do you think the 999 service is in need of digitalisation ?
You can see how people vote. Learn more
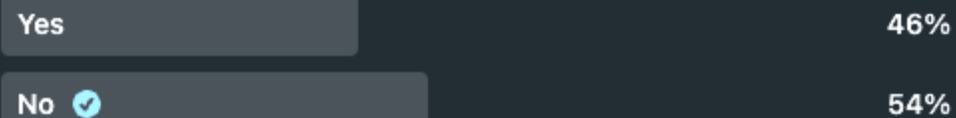
No	22%
Yes ✓	78%

Do you feel confident knowing when to phone 101 or other emergency support numbers for utilities (gas, water, electric) v 999 ?
You can see how people vote. Learn more

Yes	18%
No ✓	82%
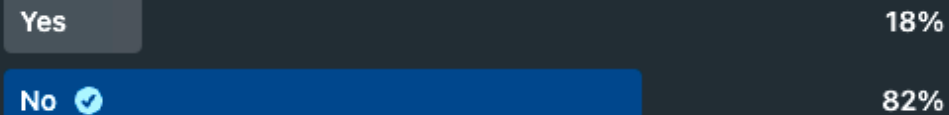
In your opinion is the current 999 service inclusive and accessible for all ?
You can see how people vote. Learn more

Yes	46%
No ✓	54%

What would be your preferred method to communicate with 999? Read all before choosing..
You can see how people vote. Learn more

Email	7%
Phone Call	43%
Mobile App ✓	50%
Text	0%

What possible enhancements to 999 would you be willing to use?
If you have another answer feel free to comment belc ...see more
You can see how people vote. Learn more

Location Sharing	22%
Image / Video Sharing	6%
Live Video Call	0%
All the above ✓	72%
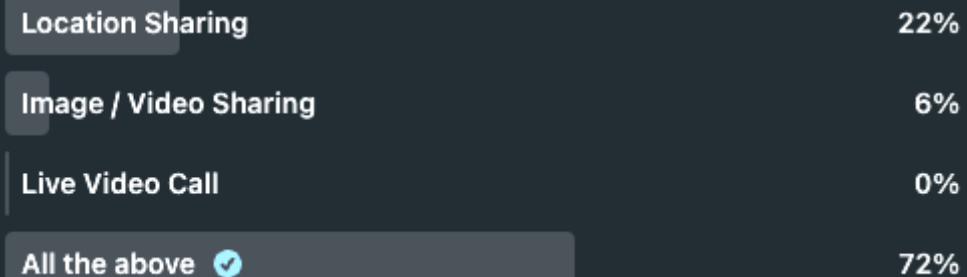
INCLUTECH

"Honey is the sweetest harvest. Bees share honey with humanity.

There's no such thing as easy honey. A bounty of honey is worth a little sting.

Stand back and let the bees make honey"
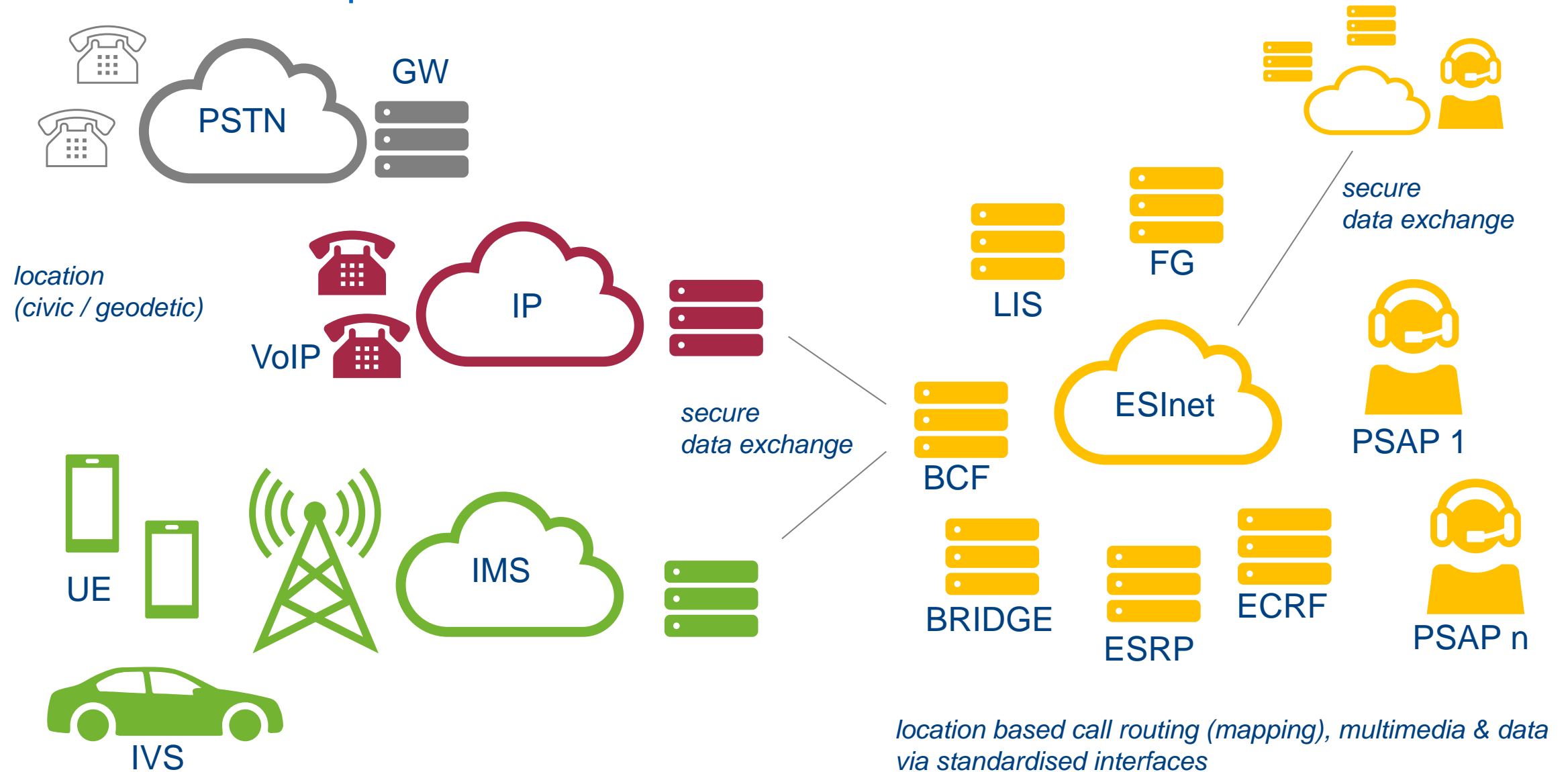
FREQUENTIS

FOR A SAFER WORLD

NG999 ROUNDTABLE 2023
NG – a few ideas where it helps
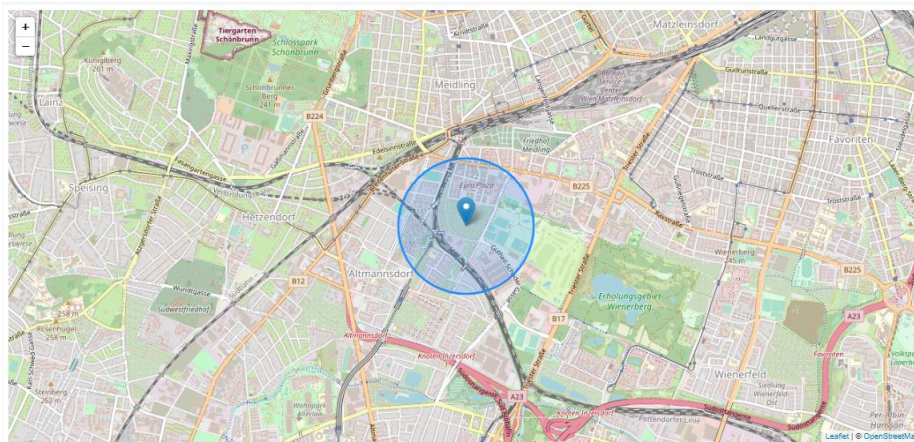
Wolfgang Kampichler, Frequentis AG

Co-Chair EENA Tech & Ops Committee

NG112 / 9-1-1 Perspective

GW

PSTN

location
(civic / geodetic)

IP

VoIP

secure
data exchange

LIS

FG

secure
data exchange

ESInet

PSAP 1

BCF

UE

IMS

BRIDGE

ESRP

ECRF

PSAP n

IVS

location based call routing (mapping), multimedia & data
via standardised interfaces

Wolfgang. Kampichler   Frequentis General | © Frequentis AG 2023

FREQUENTIS

Location by Value & Location b Reference

schematically illustrated

other sources of location

AML push (sms/https)

LIS

LocByRef (rebid)

transfer

ID ↑   ↓ *REF*

ESRP

ID (call setup)
LocByVal

ID (call setup)
LocByVal
LocByRef
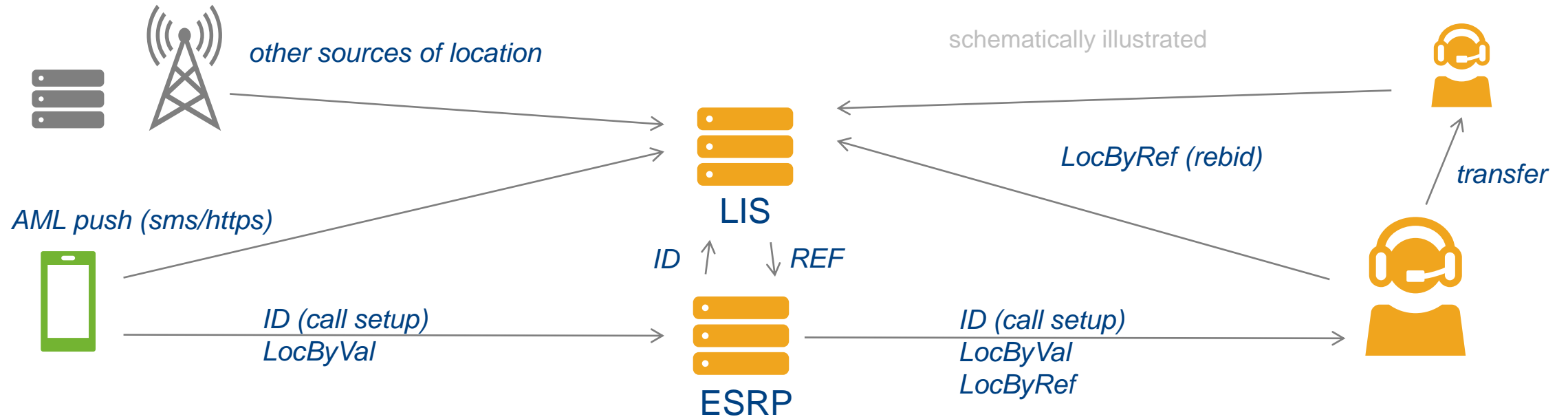
AML: radius = 600m (initial report)
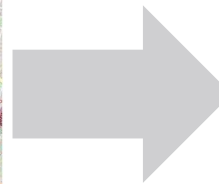
AML: radius = 15m (PSAP rebid)

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FREQUENTIS

Media Bridge

VoIP, App, …

VoLTE, ViLTE, RTT, …

UE

IP

IMS

BCF

ESInet

BRIDGE

media

PSAP 1

PSAP n

conference, transfer, collaboration …

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FREQUENTIS

Roaming

999

location (civic / geodetic)

IP

LIS

FG

BCF

ESInet

PSAP 1

BRIDGE

ESRP

ECRF

PSAP n

secure data exchange

FG

visited country

home country

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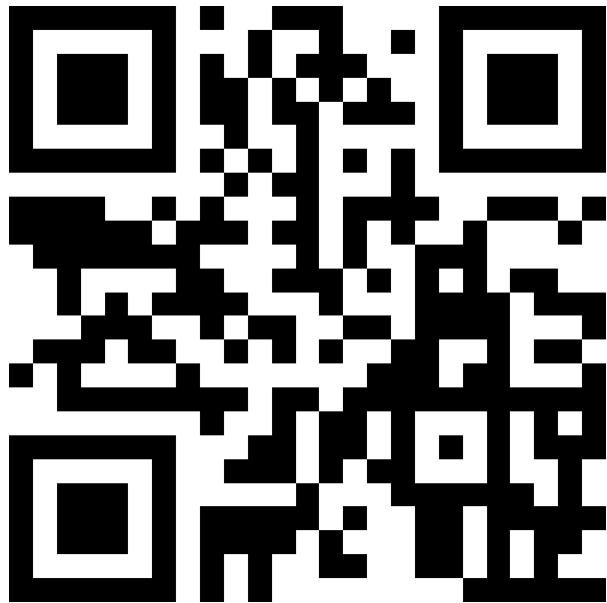
Summary

- New types of emergency communication also affect control centres and therefore need a solid foundation, ideally in the form of global standards

- All stakeholders such as handset manufacturers, network operators/carriers and control centres need to work together to enable end-to-end multimedia emergency communication (audio, video, (real-time) text or all together known as Total Conversation)

- Frequentis has been involved in standardisation from a very early stage and we consider NG112/9-1-1 standards (ETSI, NENA) as an ideal basis for the integration of control centres with an open standards-based ecosystem

- This open ecosystem enables not only secure peering of fixed and mobile networks (3/4/5G) with a so called ESInet, but also secure integration of mobile applications and IoT

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Thank You!

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Try NG112 on **Signal**

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BRITISH APCO
Working in Partnership to Improve Public Safety Technology

BAPCO Satellite Series
Keeping you connected

NG999 Roundtable: 08 February 2023

Closing Remarks

John Anthony, President, British APCO