Nemergent Solutions SL
3GPP MCPTT experts.

Madrid, 28th November 2017

Nemergent *Solutions*

PSCEurope
Public Safety Communication Europe
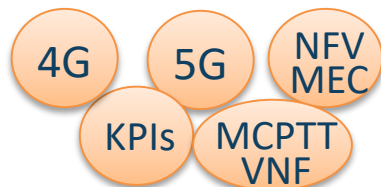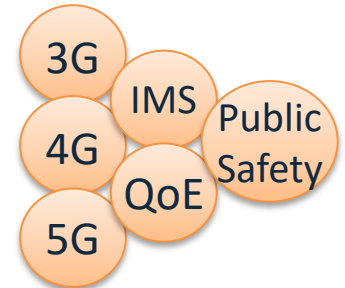
- Past / Present
  - Who we are
  - What we do
  - Some references

- Future
  - What we want to be
  - What we want to do

- Small scale demo

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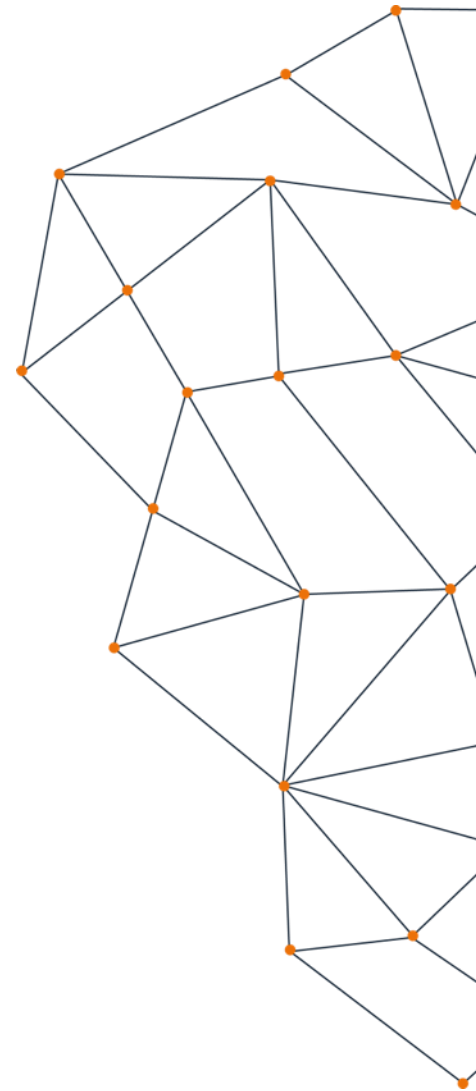
- Start-up from University of the Basque Country (UPV/EHU)
  - >5 years experience in PS LTE
- Quick facts
  - Located in Bilbao, Basque Country, Spain
  - 8 people involved
  - Collaboration with UPV/EHU R&D unit
- Focus on 3GPP Mission Critical solutions
  - Mission Critical PTT (MCPTT) and evolutions
- 5G ready NFV-based MCPTT

3G
IMS
Public Safety
4G
QoE
5G

4G 5G NFV MEC
KPIs MCPTT VNF

HORIZON 2020

interiot

FED4FIRE
FEDERATION FOR FIRE PLUS

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3

https://www.nemergent.com/traces.html
https://www.nemergent.com/repository.html
https://nemergent-solutions.com/products-services/

GERYON

| 2014 | 2015 | 2016 | 2017 | 2018 |

3GPP R13 MCPTT

3GPP R14

3GPP R15

Pre-MCPTT PS LTE

PCPS

MCPTT

eMCPTT

N-MCData MCVideo

4G/IMS
TETRA

PTT
Voice
Video
Messaging
Location

3GPP
A GLOBAL INITIATIVE

TETRA

eman ta zabal zazu

UPV   EHU

Nemergent / Initiative
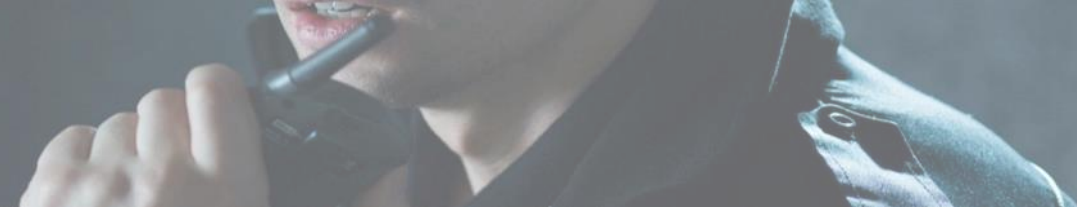
MCPTT v13.3 traces
Wireshark dissector

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Solutions

PS community:
"PS LTE solutions not ready"
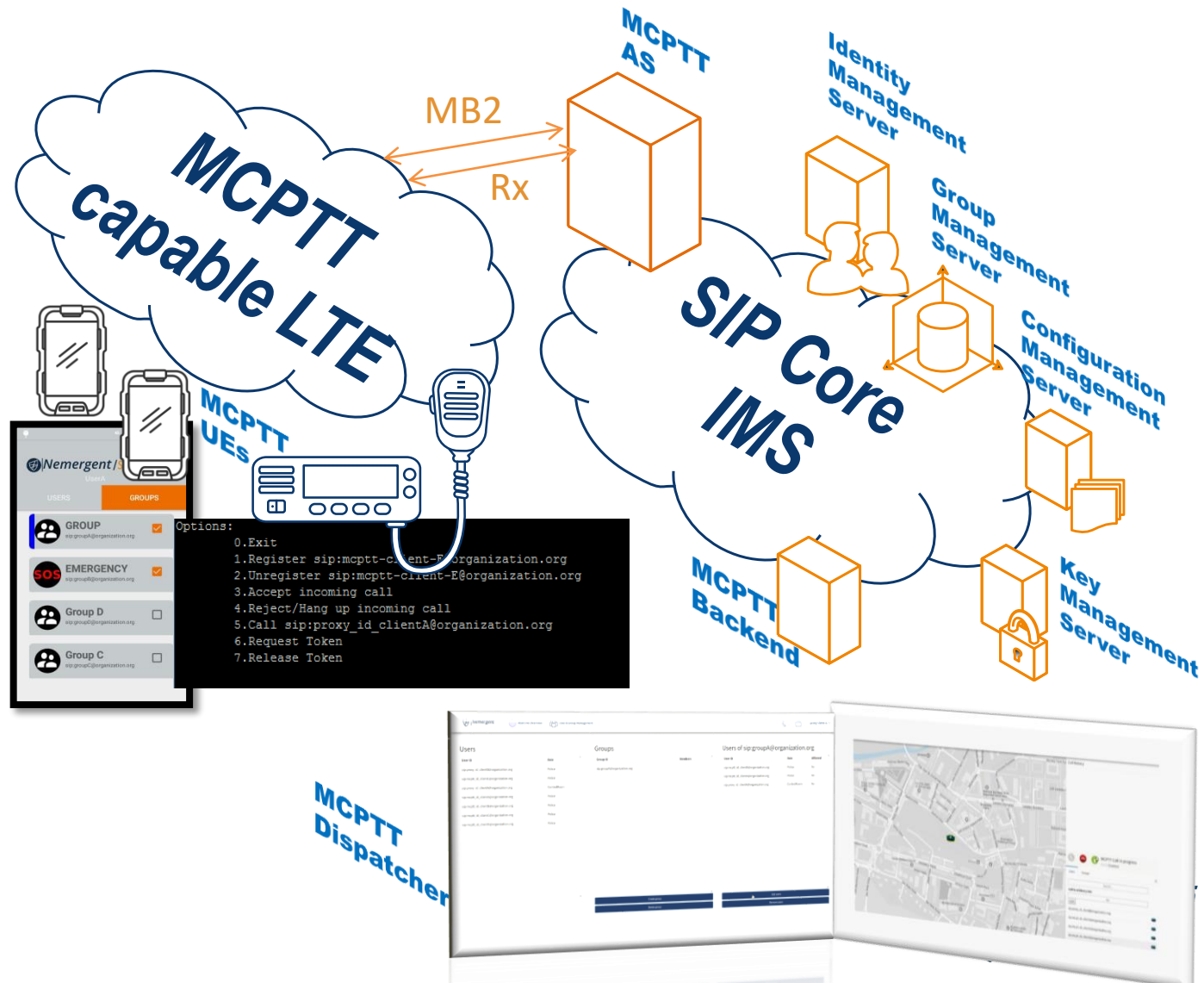"We need standards"

PS community
involved in 3GPP

Now we have MCPTT…
back to private PS LTE?

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What we do.

Work on MCPTT needs.

- Application-level SW.
- Integration with SIP/IMS cores.
- Integration with LTE-A Pro networks.
- Integration with PS devices.
- Provisioning
- Demos / pilots.
- Public / private deployments.

MCPTT AS

MB2

Rx

MCPTT capable LTE

SIP Core IMS

Identity Management Server

Group Management Server

Configuration Management Server

Key Management Server

MCPTT UEs

MCPTT Backend

MCPTT Dispatcher

```
Options:
0.Exit
1.Register sip:mcptt-client-E@organization.org
2.Unregister sip:mcptt-client-E@organization.org
3.Accept incoming call
4.Reject/Hang up incoming call
5.Call sip:proxy_id_clientA@organization.org
6.Request Token
7.Release Token
```

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USERS   GROUPS

GROUP
sip:groupA@organization.org

EMERGENCY
sip:groupB@organization.org

Group D
sip:groupD@organization.org
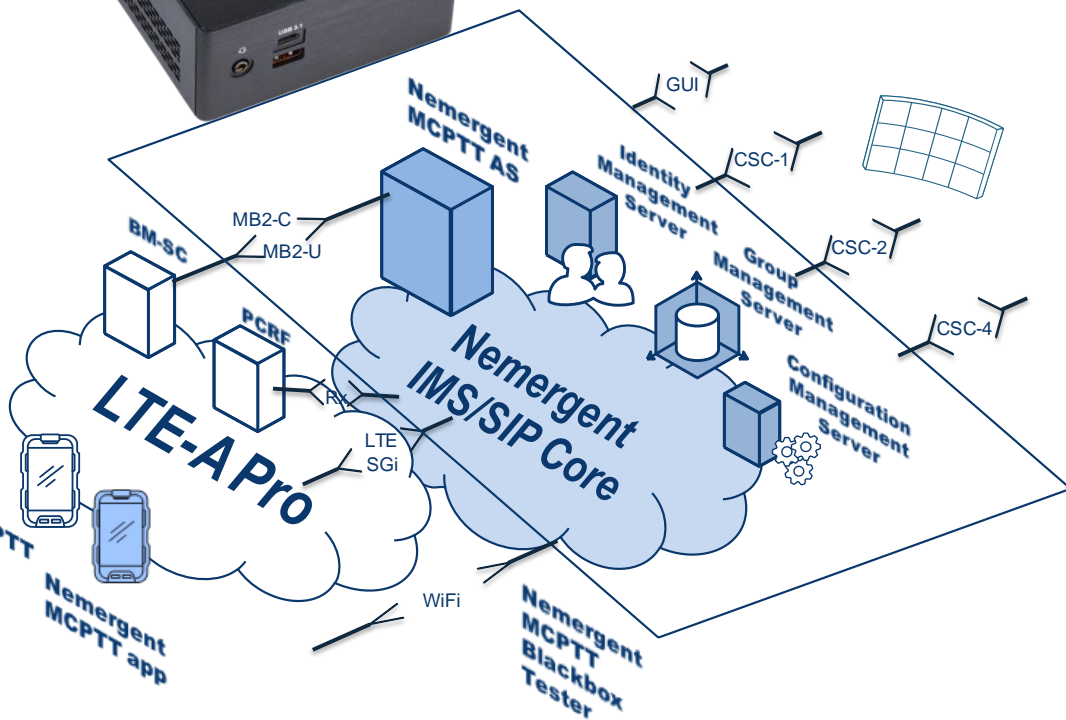
Group C
sip:groupC@organization.org

- **Your experimentation partner.**
- **Your MCPTT provider (flexible partnerships in RFIs / RFPs).**
- **SW licensing (different components).**
- **Nemergent MCPTT Blackbox Tester (3rd party MCPTT developments).**

Small form factor HW

Tailored GUI

References.
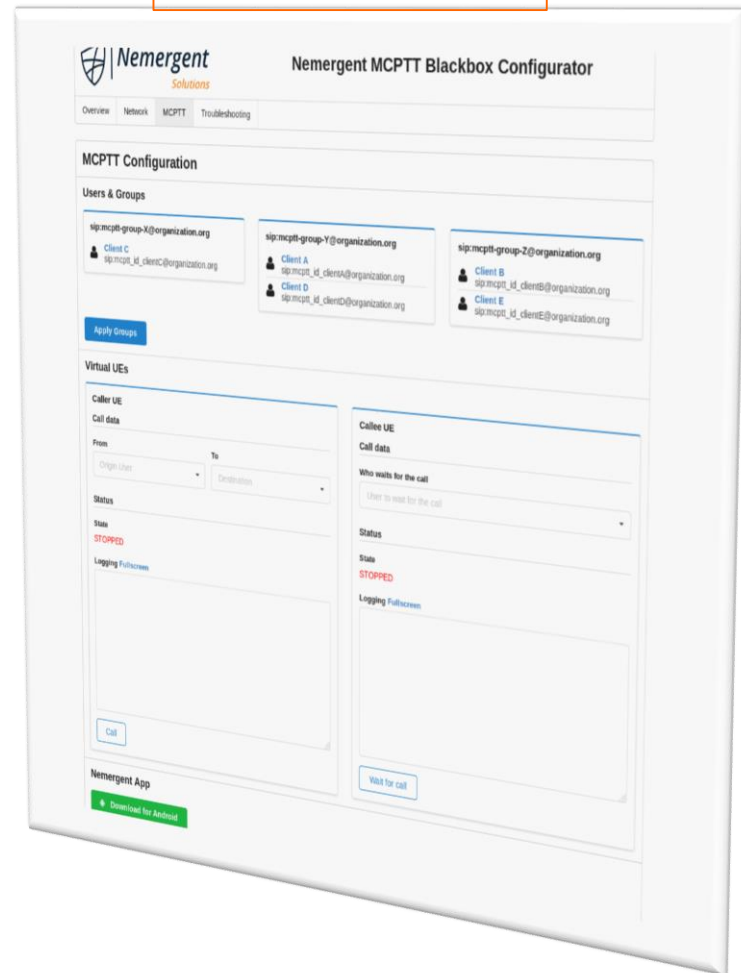
Participants

ETSI

MCPTT AS:
- Airbus
- Alea
- Genaker
- Harris
- Hytera
- **Nemergent**
- TASSTA
- ZTE

MCPTT Clients:
- Airbus
- Alea
- Armour
- Etelm (in TETRA BS)
- Frequentis (in Control Room)
- Funkwerk
- Genaker
- Harris
- Hytera
- **Nemergent**
- Spirent
- TASSTA
- ZTE

User Equipment:
- Bittium
- Funkwerk

LTE Network (EPC, eNB, MBMS):
- Athonet
- Ericsson
- Expway
- Huawei
- One2many

IMS:
- Athonet

ETSI World Class Standards

Certificate of Participation
awarded to

Nemergent Solutions S.L.

for their attendance at the Plugtests event for
1st MCPTT PLUGTESTS

Sophia Antipolis, 19th to 23rd June 2017

23rd June 2017
The issuance of the present document does not imply any form of certification by ETSI

Jorgen Friis
ETSI Chief Service Officer

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www.etsi.org

(…)

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End to End Mission Critical Push to Talk

SONIM BUILT FOR LIFE™

Nemergent Solutions

COUNTY OF FAIRFAX VIRGINIA 1742

ATLANTIC CITY POLICE N.J.

Develop / evolve MCPTT server components.
Integrate MCPTT client library with SONIM
→ User Experience.
Field tests with PSOs
→ User / Service Experience.
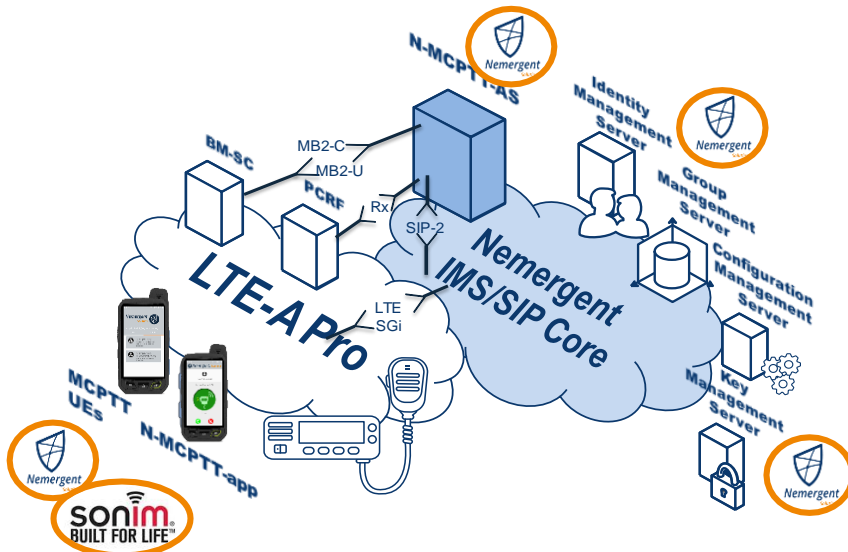
Mission Critical Open Platform (MCOP)

Bittium EXPWAY TCCA

Project target:
- Future open source Android MCPTT client.
Nemergent role:
- Deploy / maintain / upgrade MCPTT servers.

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MCPTT integration over public / private LTE.

FREQUENTIS A1 ATHONET

Trial in Austria.
- Public mobile network.
- Private deployable system.

Multi-technology PTT system.

Mutualink
sonim BUILT FOR LIFE™

APCO 2017.
- Commercial PoC solutions.
- Nemergent 3GPP MCPTT.

World first e2e eMBMS-capable MCPTT Integration.

EXPWAY
Bittium

3GPP R13 MCPTT.
- MCPTT application level.
- LTE-A Pro MCPTT QCIs.
- LTE-A Pro MCPTT eMBMS.

Proof of Concepts: Public Safety, Public Transport, energy...

telm   **SOFTIL INNOVATIVE COMMUNICATIONS**   **FREQUENTIS**   (...)

9

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Company value proposition.

MCPTT expertise.

- Mature MCPTT ecosystem.
- Real standard mission-critical grade.
- Experience in heterogeneous deployments.
- Totally focused on 3GPP specs.

Open / collaborative approach.

- Partnerships with LTE vendors, UE vendors, system integrators...
- Flexible technology provider.
- Agile adaptations / tailoring.
- Open to new opportunities / vertical sectors.

3GPP MCPTT MC-X   VS   Non 3GPP PS LTE
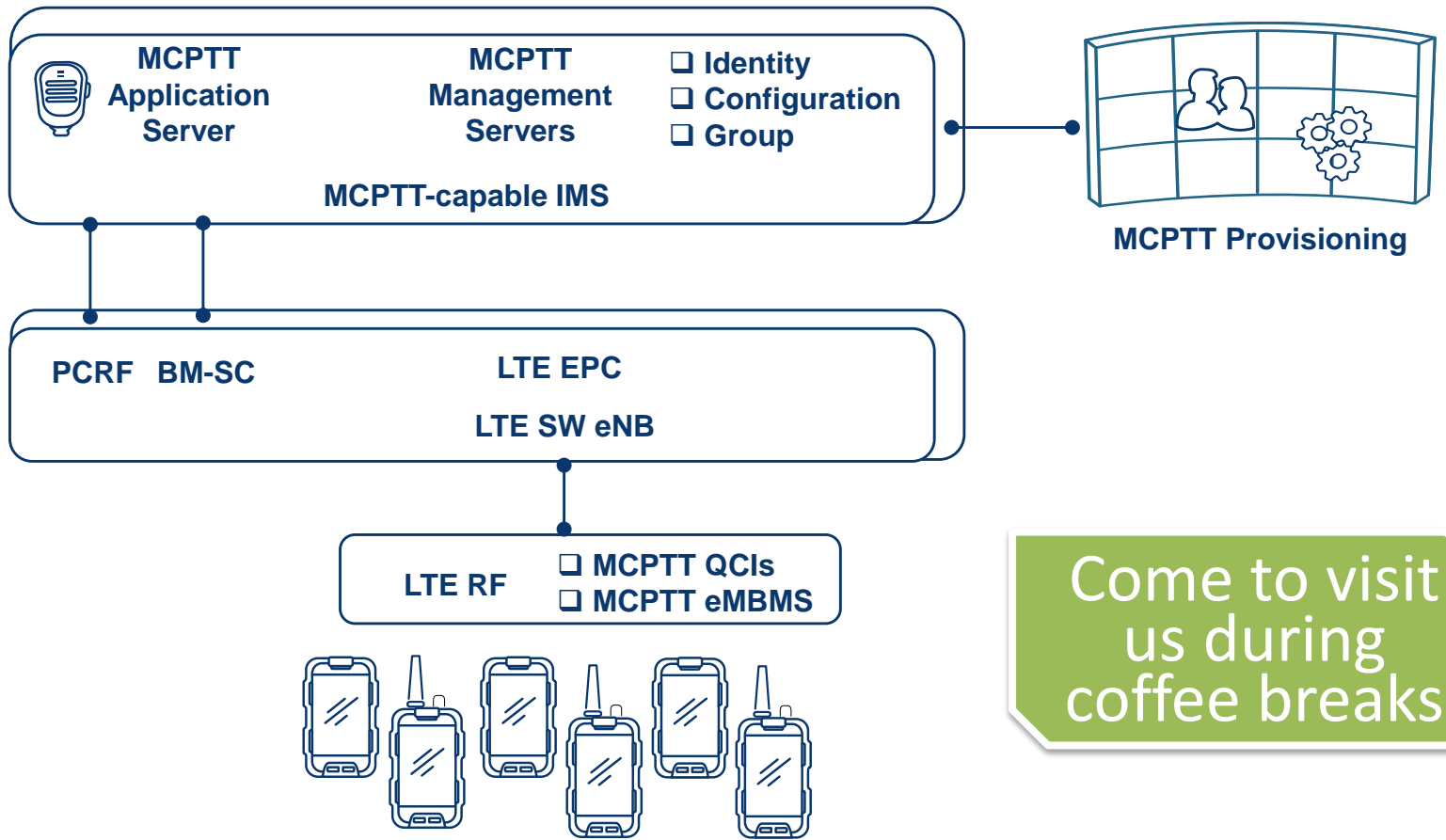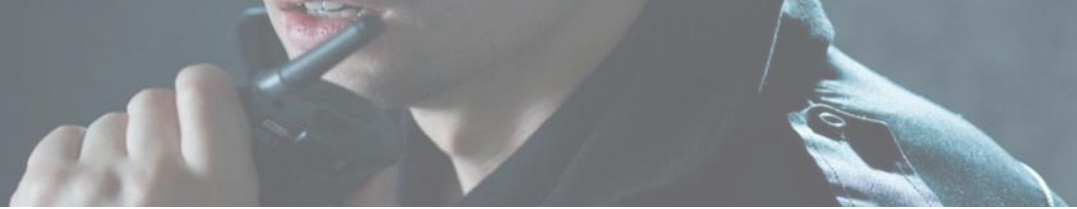
Interoperability.   Additional features.
Open ecosystem.   Niche markets.
QoS, multicasting...   Private management.

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Small scale demo.

MCPTT Application Server

MCPTT Management Servers

❑ Identity
❑ Configuration
❑ Group

MCPTT-capable IMS

MCPTT Provisioning

PCRF   BM-SC

LTE EPC

LTE SW eNB

LTE RF

❑ MCPTT QCIs
❑ MCPTT eMBMS

Come to visit us during coffee breaks

⊞ |Nemergent

Dr. Jose Oscar Fajardo
Co-Founder and CEO

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