linaro™ Arm Solutions at Lightspeed

The use of technology by emergency services

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Who Am I?

- Rémi Duraffort
- Principal Tech Lead at Linaro

- OSS developer since 2007
  - VLC mdia player
  - v8 js engine
  - LAVA, lavacli, meta-lava, lavafed, …
  - TuxRun
  - …

- … and volunteer Firefighter for 10 years

Slow to adopt new technology

Slow to adopt new technology

- Many companies provide innovative products and services
- But …
- … Emergency services are **slow to adopt new technologies**

- They are **not slow**, but **reluctant**!

Reluctant to adopt new technology

Reasons?

- Big and strict organizations
  - There is a process for everything
  - New product should fall into the right process

- Low budget for innovation
  - Most goes into operation
  - and then trainings

- Not a good fit or not mature for them

Emergency services requirements

Emergency services requirements

Products should be **battle tested**:

- reliable
- easy to use
- unbreakable (really!)

Reliable

Are you sure it is?

Reliable

Are you sure it is?

- When called for an intervention, 3 systems are trying to reach me:

Pager	Auto dialer (phone robot)	Android application

Which one is the **most reliable?**

Reliable
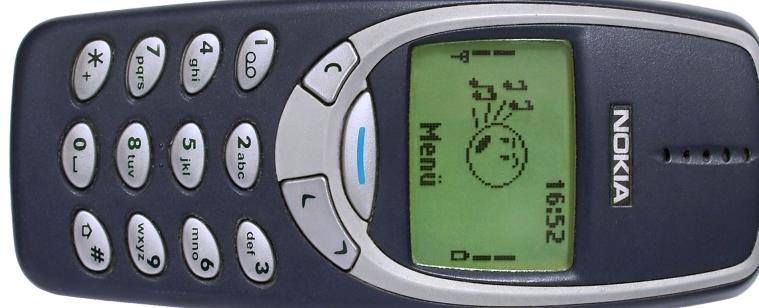
Are you sure it is?

The pager !! From 1981 !!

Reliable

Are you sure it is?

	Pager	Auto dialer (phone robot)	Android application
Reliability	~99%	~95%	< 50%
Battery	> 1 month	~ a week	Some days
Requires	A pager :) Cheap and light	A phone and working 3G, 4G network/coverage!	A smartphone with data coverage
Resistant	Rugged	Durable	Delicate

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The pager is not going to be replaced anytime soon

Arm Solutions at Lightspeed

Easy to use
Under which circumstances?

Easy to use

Under which circumstances?

When responding for a call

- It's 02:00
- The pager (then maybe the phone) ring 😴
- You dress and drive to the firestation
  - Still partially sleeping!!
- Look at the address and the reason for the call
  - Still partially sleeping!!
- … 🚒🚑

- After 3 calls in the same night, speaking right after waking up is difficult…

🙄

Easy to use

Under which circumstances?

When wearing fire gears
- grasping is difficult
- visibility is largely reduced
- movements are more difficult
- …

Then add smoke from the fire

Easy to use

Under which circumstances?

Requirements:

- Usable even when tired
  - Make the UI as simple as possible
  - **K**eep **I**t **S**imple **S**tupid
    - Keep only essential features
- Usable with gloves and limited visibility

Example:

- **One button** (power-on, light, acknowledge)
- Simple display
- Ring in case of danger

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Unbreakable
Really?

Unbreakable

Really?

When on intervention

- stressed, tired, under pressure
  - Not paying attention to the equipment
- Move fast
  - and break things

One last story …

Unbreakable

Really?

1. A manufacturer loaned "unbreakable" security choose
2. Even said "**you can roll over with a fire truck**"
3. Left the firestation
4. …
5. "**No you can't**" said the firemen after a trial

VS.

Summary

Summary

Want to build a product for emergency service?
- Make it reliable, easy-to-use and unbreakable

In doubt:
- Try to have a day or two with them, on the field!

Thank you

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