

An integrated approach to fast and secure emergency communication

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EMERGENCY COMMUNICATION

- Uses a limited dynamic subset of mobile lightweight devices with a permanent secure (mutual and backend) connection from the start of the intervention
- Uses a limited number of applications: GIS, intervention plans, stock lists,...
- Cannot rely on generally available networks
 - Needs own immediately available ad-hoc deployed infrastructure without configuration time and skills required
 - Additionally use public infrastructure if available
- Needs to be flexible and future proof with no restrictions on the application level
- Security! No intrusion, information leakage, eavesdropping paparazzi or sabotage may be possible
- Streaming video can provide better insights during exploration
- Scalable when the network grows in coverage area
- Requires interoperable group fencing for different teams



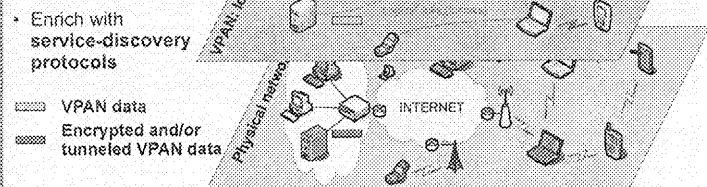
Permanent communication = crucial
Saving time = saving lives

TOWARDS NETWORK VIRTUALIZATION: VPAN

The internet: different technologies, big, overwhelming, insecure, no mobility, requires technological skills, unreliable

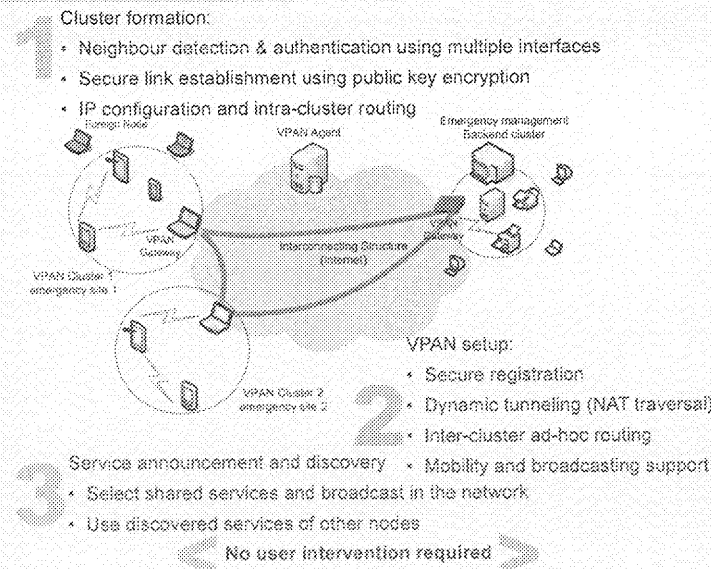
➔ Create a logical network on top of base networks:

- Small, secure, shielded and trusted environment
- Session mobility due to fixed overlay IP addresses
- Introduce ad-hoc protocols for self-creating, self-organizing, self-administering, self-healing systems
- Enrich with service-discovery protocols



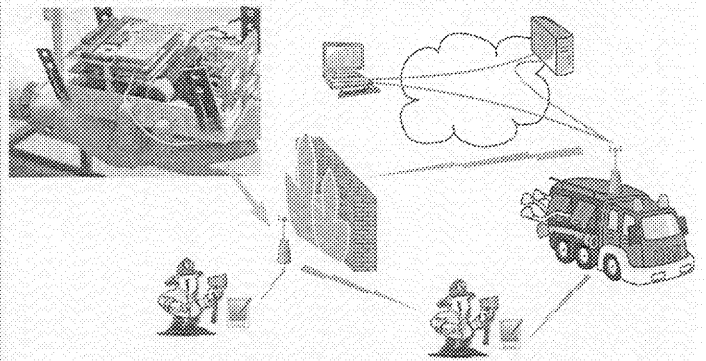
VPAN = Virtual Private Ad-Hoc Networking

VPAN IMPLEMENTATION



VPAN ORGANIZATION FOR EMERGENCY

- Pre-configured team nodes with shared services (GPS, VoIP,...)
- Backend node with emergency management system, GIS,...
- intervention team immediately leaves HQ receiving data on mobile devices
 - Using personal or a shared 3G or TETRA interface
- At arrival: extend broadband coverage with intermediate nodes (GeoBIPS), fallback on 3G when link break occurs (seamless, without user intervention)



Secure, flexible and permanent communication, saving time, no user knowledge required

STATUS

- VPAN
- Proof of concept versions for Linux, Mac OS X (in co. with ALU), Windows
 - Implemented and tested on PC, Nokia NXX tablets, Neo Freerunner (smartphone), embedded ALIX boards
 - Real-life tests, performance evaluations
 - Ongoing projects: UseNET (M2M), TranseCare (e-care), Deus
 - Ongoing improvements and additional functionality
 - Ongoing research: advanced multipath routing (ITEA2 UseNET project)
- IBBT GeoBIPS & ADAMO proof of concept (finished)
- Tested by firemen in fire exercises. Product development by industrial partners

ACKNOWLEDGEMENTS & REFERENCES

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October 20 - 21, 2009

Antwerp

Crowne Plaza Hotel

Antwerp - Belgium

Alcatel-Lucent has the pleasure to invite you to the annual Bell Labs Open Days.

This year it is all about "**Elaborating Connections**" in every sense of the word and open for EMEA and others regions. Find out how Alcatel-Lucent's new strategy reflects on our research initiatives and customer projects.

During our two Open Days we will focus on **new video communications** and its impact on the network together with **Application Enablement** as a strategy to bridge the Web 2.0 and Telecom worlds.

Tuesday, October 20. Bell Labs Research Colloquium

Who should attend

A truly unique occasion for participants from European Universities, Research Institutes, Operators' CTO's, and research and government organizations to interact and hear about the latest technology evolutions!

Why attend

A technical colloquium on some of the key research topics of Bell Labs Antwerp will illustrate the work we are doing in Belgium that is already redefining the future of the telecommunications industry worldwide. It will include presentations of leading European technology experts from universities and the industry, complemented with Bell Labs speakers. Bell Labs Antwerp will demonstrate that key technical know-how enriches future telecommunication with a number of demos in our exhibition area.

Wednesday, October 21. Application enablement and business model innovation

Who should attend

This is an exclusive event for telecom operators, dedicated to product managers, CMO's, CTO's, head of innovation with focuses on strategy & product innovation.

Why attend

In this customer workshop we will give an overview on the overall strategy and vision on network evolution, and we'll have several operators presenting their vision based on concrete reference cases by European telco's:

Invited speakers include on following topics:

- Innovative mobile application
- New opportunities in the payment domain
- Open application enablement platforms

As keynote speaker we welcome Wim Sweldens, Vice-President Alcatel-Lucent Ventures and Network Technology and a key industry analyst will discuss the end user perspective.

Check <http://2008.bell-labs.be> for more info on the Bell Labs Open Days of 2008!

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