

Signals in Motion: Mobile Communication and Geo-Positioning Technologies

Organizers

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Session Abstract

This session explores historical mobile communication and geo-positioning technologies, emphasizing their entanglement with existing infrastructures, regulatory frameworks, and economic imperatives. The increasing mobility of signals—whether for communication, navigation, or coordination—required not only technical innovations but also negotiations over spectrum allocation, funding models, and the intended versus actual uses of these technologies.

Building on the conference theme, this session examines how radio-based mobile systems leveraged existing infrastructures for new, often unforeseen applications, and how these systems interacted with broader technological, economic, and political landscapes. We invite papers that examine mobile communication, paging, and geo-positioning systems in historical contexts, from national telecommunication networks to military and commercial applications.

Potential Topics for Contributions

- Historical case studies of paging systems, mobile telephony, or geo-positioning technologies
- The role of existing infrastructure in enabling new communication services
- The politics of spectrum allocation and frequency use
- Case studies on LORAN, OMEGA, GPS, or radio navigation systems
- Mobile communication systems as state-funded projects vs. private initiatives
- Comparisons of national approaches to mobile and positioning systems

1. The VIP Line – Repurposing Time Signals for Mobile Paging in Switzerland

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Since the late 19th century, the Neuchâtel Observatory played a key role in time distribution, expanding its work in the mid-20th century with the development of atomic clocks. In the 1960s, it established a high-precision low-frequency time signal system, ensuring the reliable transmission of time. As part of this effort, the Observatory also contributed to the development of signal receivers and radio clocks that could automatically synchronize with the transmitted radio time signal.

In the 1980s, the Observatory launched a commercial venture leveraging this infrastructure. By repurposing unused bandwidth in time signal transmissions, it introduced a long-range paging system, allowing users to receive calls while driving as a cheaper alternative to existing car phone and paging services. For the Observatory, this was a natural extension of its long-standing practice of monetizing time services.

However, unlike traditional time signals, the VIP Line blurred the boundary between public infrastructure and commercial use. Its reliance on a frequency allocated for timekeeping raised concerns about fair competition with private telecom services. Regulatory scrutiny and pressure from competing systems eventually led to the spin-off of the VIP Line into a private company.

This case highlights how scientific institutions navigated commercialization, the contested use of public-purpose technologies, and the shifting role of state-supported infrastructure in mobile communications.