

Europa > CORDIS > Search > Simple search > **Projects****:: About Projects****5th Generation Non-Orthogonal Waveforms for Asynchronous Signalling****Start date:**2012-09-01**End date:**2015-02-28**Project Acronym:**5GNOW**Project status:**Execution

Coordinator

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Description

Objective: LTE and LTE-Advanced have been optimized to deliver high bandwidth pipes to wireless users. The transport mechanisms have been tailored to maximize single cell performance by enforcing strict synchronism and orthogonality within a single cell and within a single contiguous frequency band. Various emerging trends reveal major shortcomings of those design criteria:

-The fraction of machine-type-communications (MTC) is growing fast. Transmissions of this kind are suffering from the bulky procedures necessary to ensure strict synchronism.

-Collaborative schemes have been introduced to boost capacity and coverage (CoMP), and wireless networks are becoming more and more heterogeneous following the non-uniform distribution of users. Tremendous efforts must be spent to collect the gains and to manage such systems under the premise of strict synchronism and orthogonality.

-The advent of the Digital Agenda and the introduction of carrier aggregation are forcing the transmission systems to deal with fragmented spectrum.

5GNOW will question the design targets of LTE and LTE-Advanced having these shortcomings in mind. The obedience of LTE and LTE-Advanced to strict synchronism and orthogonality will be challenged. 5GNOW will develop new PHY and MAC layer concepts being better suited to meet the upcoming needs with respect to service variety and heterogeneous transmission setups. A demonstrator will be built as Proof-of-Concept. 5GNOW will build upon continuously growing capabilities of silicon based processing.

Wireless transmission networks following the outcomes of 5GNOW will be better suited to meet the manifoldness of services, device classes and transmission setups being present in envisioned future scenarios like smart cities. The integration of systems relying heavily on MTC, e.g. sensor networks, into the communication network will be eased. The per-user experience will be more uniform and satisfying. To ensure this 5GNOW will contribute to upcoming 5G standardization.

Achievements:**General information:**

Project Details

Start date:2012-09-01**End date:**2015-02-28**Duration:**30 months

Project Reference:318555**Project cost:**3526991 EURO**Project Funding:**2490997 EURO**Programme Acronym:** [FP7-ICT](#)**Programme type:**Seventh Framework Programme**Subprogramme Area:**Future Networks**Contract type:**Collaborative project (generic)**URL:****Subject index:**Information and communication technology applications

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