



# COGNITIVE SMALL CELLS FOR SELF-ORGANIZING NETWORKS

[DGC] ICT-ENABLED DEVICES FOR BETTER LIVING - [DRT] DECISION MAKING

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Broadband cellular networks play a critical part in achieving broadband penetration and providing access into the home and to individual devices is the only way to ensure the success of the future Internet. However, in dense urban centers like in Singapore and other Asian cities, the rise of bandwidth demand per surface unit yields a shrink of the cell's coverage area and therefore increases the number of cells sites, with straight consequences on the complexity of distributed collaboration and on network scalability issues. The main goal of this project is to enable an intelligent, self-organized and economic deployment of a very high throughput per km<sup>2</sup> network composed of small cells.

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Novel design methodology related to decision making in self-organizing networks. Within the design methodology developed, it will propose new approaches and insight into how to optimally determine resource, backhauling architecture, access control, and technology adoption in small cell networks.

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