
Résumé du projet de recherche (Langue 1)

Cognitive networks, that is networks able to observe their environment and take appropriate decisions in an autonomous manner, are expected to be used in Future Internet and enable it to address complex problems. However, they are today researched into in limited domains (e.g. attack detection, optimized routing) only - and are generally not proposed under an application-transparent form. The subject consists in defining protocol mechanisms allowing to set-up a cognitive network independent on running applications. In a first step, interfaces and protocols will be proposed that will allow the interconnected entities to exchange their respective capabilities (including reconfigurability). Secondly, a local self-awareness system will be defined. This system will enable the entities to organize themselves and become able to handle global, more complex problems. Finally, control interfaces at different layers of the protocol stack will be proposed, to allow for the application of the determined policies as well as for the dynamic acquisition of new roles in the topology. The emphasis will especially be put on machine-to-machine environment constraints, such as mobility, intermittency and limited resources.