

WWRF to publish White Paper on Wireless Intelligence

WWRF is now working on a white paper on Wireless Intelligence. This white paper, part of the Outlook series, will outline the expectations of the industry and the market on WI and the industry commitments to shape, evolve and optimize its mobile broadband products portfolio at the right level to face the upcoming challenges on network design and management.

The four dimensions describing intelligence are the abilities 1/ “to perceive” (collect data information that can be rich, complex or subtle), 2/ “to learn” (in a determined environment), 3/ “to abstract” (enable the creation of new meanings) and 4/ “to reason” (allow to plan and decide). Within this context, Artificial Intelligence (AI) is commonly defined as the ability of a given cyber-physical system to perceive the environment, process and analyse the perceived information, and take a set of actions that maximize the likelihood of achieving a certain goal.

In the last few years, AI has been successfully applied to many domains including medical diagnosis, automatic pilots in avionics, and gaming, to name a few where AI performance has demonstrated capabilities beyond its human counterpart. More recently, AI is also being perceived as a potential technology solution to cope up with the increasing complexity of wireless communication system design and associated management. The former being induced by the extreme range of requirements for user experience, efficiency, and performance. Future wireless networks will require robust intelligent algorithms to adapt network protocols and perform network and resource management tasks for different services in different scenarios. For example, for network management and administration duties, AI will be mainly expected to make smart predictions, and to take improved decisions and actions that until now were mostly based on pre-defined rulesets obtained from experience accumulated by humans over the years.

When applied to the wireless communications domain, AI is referred to as Wireless Intelligence (WI). When fully operative, it is expected that WI will be transformative and pervasive. WI will be in all sub-systems within the wireless ecosystem; in devices, User Equipment, machines, cars or connected things. The network elements themselves in Operation Support Systems (OSS), Business Support Systems (BSS), and application servers up on the cloud would also be impacted. WI is expected by the market to not only reduce operational expenditures (OPEX), but also to increase user quality of experience (QoE) as well as help the introduction of new value chains in an increasingly competitive and complex business environment.