

Promising technologies for upgrading wireless networks performance

Abstract – Starting from the simplex radio broadcasting of analog signals, the world has witnessed successful implementations of many wireless communications systems like satellite communication, Wi-Fi, Internet of Things (IoT), etc. The wireless cellular network, which has passed through five generations in a span of just 30 years and has become an integral part of our society, is particularly phenomenal. The unprecedented demand of availing innovative services over cellular networks is still triggering the research community towards development of 6G.

More interestingly, this astonishing development of wireless communication technologies also involves fundamental changes in the principles of efficiently designing the wireless systems. This plenary session is aimed to describe such remarkable developments in the light of Shannon's framework of communication systems design, and to point out the apparent indications about the start of the «Post Shannon Era». Also, the fundamental principles of leading wireless technologies like «Multiple Input Multiple Output» (MIMO), «Two Way Relaying», «Physical Layer Security», «Artificial Intelligence (AI) based End-to-End (E2E) Communication System Design», and «Smart Reflect Array», along with their potential for further upgrading the wireless networks performance will be presented.