An Industrial Design Approach, Implementation, and Application Perspectives for Surveillance Radar Systems

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ABSTRACT
This paper is devoted to demonstrate the most important keys to interface the design and implementation of radar systems with industrial considerations to achieve a competitive radar product. The investigation is focusing on the industrial design ideas for radar systems by formulating the advanced design concepts, system engineering design requirements and disciplinary perspective for radar production. Industrial design is synergic the industrial society, which makes originally isolated disciplines contact and interact each other to form an organic unity. It implements science, technology and creative art together. Science and technology objectively reveal the laws of nature and creative art dynamically. It doesn't only seek for unity of radar subsystems but also interested in product coordinate, human resources and environment. The implementation of the approach is demonstrated through systems engineering design rules for all radar system disciplines including, electronics, microwave, antenna, computer, digital signal processing and electrical power engineering.

Keywords: Surveillance radar, waveform generator, solid state transmitter, Stripline Antenna, RF receiver, IF receiver, Digital signal processing and Data processing.