

Manufacturing Networks

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Abstract: Fifth Generation cellular networks, or 5G for short, promise huge gains in wireless networking capability: gigabits per second speeds, millisecond latency, perfect reliability, and millions of devices packed together sharing the resources. These are all critical concepts to enable within the next generation networks in order to support the next generation of applications. Among those applications, a lot of attention is being paid to autonomy, think a network of self-driving cars coordinating their movements to provide a seamless traffic experience. However, another way to look at what 5G and future G systems will produce is *precision*. In this talk, we will cover some concepts of what precision means as a demand on the future networks and how it might impact the future of manufacturing. By breaking the chains of static infrastructure built around special-purpose communications, a 5G+ world enables new approaches to support cost-effective, just-in-time manufacturing to adjust with shifting supply chains.

Bio: Dr. Tom Rondeau joined DARPA as a program manager in May 2016. His research interests include adaptive and reconfigurable radios, improving the development cycle for new signal-processing techniques, and creating general purpose electromagnetic systems.

Prior to joining DARPA, Dr. Rondeau was the maintainer and lead developer of the GNU Radio project and a consultant on signal processing and wireless communications. He worked as a visiting researcher with the University of Pennsylvania and as an Adjunct with the IDA Center for Communications Research in Princeton, NJ.

Dr. Rondeau holds a Ph.D. in electrical engineering from Virginia Tech and won the 2007 Outstanding Dissertation Award in math, science, and engineering from the Council of Graduate Schools for his work in artificial intelligence in wireless communications.