Erroneous Requirements: A Linguistic Basis for Their Occurrence and an Approach to Their Reduction

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John Knight received his Ph.D. in Computer Science from Newcastle in 1973. After two years at West Virginia University and seven years at NASA's Langley Research Center, he joined the UVa in 1981 as an associate professor of Computer Science. He spent 1987-89 at the Software Productivity Consortium, and was promoted to professor in 1992. He has directed six Ph.D. theses with three more in progress. He is the author or co-author of over 60 papers.

John Knight's research is concerned with the engineering of software for safety-critical systems, i.e., systems where the consequences of failure are very serious, such as digital flight control systems in aircraft and digital shutdown systems in nuclear reactors. The goal of his research is to develop methods by which software for safety-critical systems can be built and trusted in operation to perform as desired. He explores several different approaches including software construction based on formal mathematical techniques, carefully controlled software development using previously certified software parts, high performance software testing and inspection methods aimed at finding and eliminating faults, and software fault tolerance.