

# Fieldbus and Quality of Service

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## Abstract

The expression "Quality of Service" (QoS) is now used in very different contexts, in human societies, in administrations, in railways, in healthcare, and obviously in the network systems. This expression can be used each time a service is requested by a so-called "client" or "user" to a system that may be considered as a "server" or a "service provider". It tries to express in a quantified manner the way in which the service is provided.

But how to request a given QoS ? How to measure the QoS ? How to obtain the requested QoS ? How to tune the system? A lot of questions are currently of interest essentially with the development of multimedia transmission on Internet but also with the development of embedded systems, of time critical systems. But before to answer these questions, what is really QoS ?

This paper tries to answer these questions, starting with fieldbus experiences and underlining the open issues for research.

## Speaker's biographical information

Professor in «computer science and industrial computing» at the INPL (Institut National Polytechnique de Lorraine) in Nancy (France) since 1981. Age : 54 years old, married, two children.

## Academic (studies, research, teaching)

Ph D in computer Science in 1974. Assistant at INPL from 1971 to 1974, Lecturer at INPL from 1975 to 1981. Doctorat d'état en Mathématiques (option Computer Science) in 1980. Professor since 1981 teaching in the field of communication and of real time systems. Founder and in charge of several education options at the INPL, for regular students, for continuous education, for high school teachers, from 1981 to 1998. The last new section has been created in september 1998 in the field of «New Technologies in Information and Communication» for unemployed engineers. Director of a research team in networking and real time from 1981 to 1994.

Deputy director of the CRIN ( Centre de recherche en informatique de Nancy (300 people) from 1994 to 1997. The CRIN is now called LORIA. In charge of a french national research group for the CNRS, in the field of real time (50 people from 10 laboratories) from 1994 to 1998.

1997-now . In charge of the cooperation in research for E-medicine

Expert for the french ministry of education and research in different committees. Actually expert in the french committee in charge of telemedicine. Author and coauthor of 5 books and of around 100 papers in journals, newspapers, conferences and workshops. Author of more than 20 invited conferences

### **Industrial cooperation and standardization**

Commissioned to the french Ministry of Research and of Industry for the development of microelectronics companies in 1980 and 1981. Chairman of the french group which has defined the WorldFIP fieldbus which is now a european standard and one of the basis of the IEC 61158 Standard .

Member of french standardization committees (AFNOR and UTE). Technical manager of the WorldFIP non profit association during four years (1987-1991). In charge of several research contracts with french and european companies

### **International cooperation**

Invited professor in Algeria, Thailand, Morocco, Brazil, Argentina, Mexico. Expert for the french ministry of cooperation in Algeria, in Morocco, in Brazil, in Irak and in Thailand. Cooperation in teaching and research with Algeria, Morocco, Portugal, Brazil, Argentina. Member of IEC and ISO committees, for the standardization of fieldbuses and of real time communication systems. Participation to different european research projects.