

847-851. In the same issue, a further clarification of the state of HDTV production is outlined in an article by Joseph A. Flaherty of CBS operations and engineering, New York. This article immediately precedes Dr. Schreiner's and is on pages 844-846.

Due to the desire by U.S. broadcasters — and others worldwide — to protect their broadcasting industries, many new HDTV transmission standards have come to the fore. Among them is MUSE, which is an acronym for Multiple Sub Nyquist Encoding theorem.

The engineering theorem put forth by Nyquist states that in order to accurately transmit a digital signal you must sample the signal at at least twice the rate of the highest frequency. A note of interest, this theorem is the basis for recording Compact Discs.

"HDTV is perceived as yet another threat to an already shrinking source of revenue."

In the MUSE system of transmission, the wide bandwidth signal is compressed and encoded for transmission and decoded at the receive end. This system would permit the use of conventional transmission media to transmit the expanded bandwidth HDTV signal.

Conventional broadcasters of today fear HDTV because of the expanded bandwidth and the resolution-increased picture quality. The networks have watched as their market share shrinks as it is eroded by the VCR and specialty services such as pay TV and

pay per view. HDTV is perceived as yet another threat to an already shrinking source of revenue.

HD MAC and 3xNTSC, as well as other systems which are backwardly compatible with the current broadcasting technologies, are other standards that are being advanced for HDTV production and transmission.

Yves C. Faroudja is a name that is synonymous with signal processing and enhancement within the NTSC system. He has applied for and received a number of patents for signal processing devices related to the NTSC signal. He has been recognized for his significant contribution to the further improvements of the existing NTSC broadcast signal by the SMPTE.

In a paper co-written with Joseph Roizen (now deceased), Faroudja describes the recent developments that can enhance the NTSC signal while we wait a possible best-of-all-worlds television broadcast standard. The paper, *A Progress Report On Improved NTSC*, appeared in the November 1989 issue of the *SMPTE Journal*, pages 817-822.

In a paper that predates this one Faroudja illustrated the design and performance parameters of a system which he dubbed SuperNTSC. It appears in the *SMPTE Journal* of August 1987, pages 750-761.

Along the same lines NTV (The Nippon Television Network) began conducting experiments with an enhanced television system that is compatible with the NTSC system. The paper which describes the objectives that were set out and the method of achieving the desired results, is entitled *Ex-*

periments With An Enhanced Quality NTSC-Compatible TV System. It was co-authored by Yoshio Sugimori, Yoshide Kimata and Yosai Araki and appears in the *Journal* of December 1988, pages 970-976.

In the next edition of this column we will look at sources of information on true HDTV and would-be HDTV systems.

Regular readers of this column will realize this particular version is much shorter than usual. They are right, this is a shorter than usual column owing to the fact that on March 20 our family was blessed with the birth of our third child, and second son, Evan Josiah Miller. He weighed in at seven pounds, six ounces. Mother, child(ren) and dad are all doing well, although a little busier than usual these days.

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FOOTNOTES:

1.) The *Journal* of the Society of Motion Picture and Television Engineers, Joyce H.D.M. Westerink and Jacques Roufs, Phd., *Subjective Image Quality As A Function Of Viewing Distance, Resolution, And Picture Size*, page 113.

2.) The *Journal* of the Society of Motion Picture and Television Engineers, Joyce H.D.M. Westerink and Jacques Roufs, Phd. *Subjective Image Quality As A Function Of Viewing Distance, Resolution, And Picture Size*, page 113.



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