



ANALYSING THE PAYLOAD ENVELOPE RATE FOR SONET (STS) & SDH (STM) BASED DIGITAL NETWORK

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ABSTRACT: Synchronous Optical Networking & Synchronous Digital Hierarchy are standardized protocols it transfer multiple digital bit streams with same period & phase over optical fiber using lasers or highly coherent light from light-emitting diodes. At low transmission rates data could also be transferred via an electrical interface. method was developed to replace PDH system for carrying big amounts of telephone calls & data traffic over same fiber without same period problems. SONET generic criteria are detailed in Telcordia Methods Generic Requirements document GR-253-CORE. Generic criterion same to SONET & different communication system (e.g., asynchronous fiber optic management or digital radio systems) are found in Telcordia GR-499-CORE.

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[1] INTRODUCTION

To satisfy requirements of increasing data rate for differing from each other applications; ANSI developed standard known as Synchronous Optical Network (SO-NET) by utilizing enormous bandwidth of optical fiber. Another similar standard developed by ITU-T would be known as SDH. SO-NET would be American National Standards Institute standard with same period data transmission on optical media. international equivalent of SO-NET would be synchronous digital hierarchy. Same here; they ensure standards so it digital networks could interconnect internationally & it existing conventional transmission systems could take advantage of optical media through tributary attachments. SO-NET had been proposed by Bell core in middle 1980s & would be now ANSI standard. SO-NET defines interface standards at physical layer of OSI seven-layer model. standard defines hierarchy of interface rates it allow data streams at different rates to be multiplexed. SO-NET establishes Optical Carrier (OC) levels from 51.8 Mb ps(OC-1) to 9.95 Gbps. Prior rate

standards are used by different countries specified rates it had been not compatible for multiplexing. With implementation of SO-NET; communication carriers throughout world could interconnect their existing digital carrier & fiber optic systems. Short for *Synchronous Optical Network*; standard for connecting fiber-optic transmission systems.

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