System Organization and Objectives

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This article describes the system organization and objectives of the No. 1 Electronic Switching System Arranged with Data Features. The new hardware and software designs required to adapt a No. 1 ESS to a store and forward system are outlined with emphasis on the techniques used to get large system capacity, continuous reliable operation, and flexible service features. System operation, traffic capacity, and use of the new system are also discussed in this introduction to seven detailed articles.

I. INTRODUCTION

A new store and forward message switching system has been designed and is now serving a nationwide network for the Long Lines Department of the American Telephone and Telegraph Co. It handles administrative traffic, time and payroll reports, circuit order layout records, and plant service results records. The new system is called ADNet, for Administrative and Data Network.

This is the first of eight articles reporting on the new system, which uses single and multistation lines for transmitting teletypewriter and data messages. The lines are supervised by an electronic message switcher which polls the stations, receives their messages and queues them for delivery to one or more destinations. The switcher is designed around the No. 1 ESS processor, supplemented by new peripheral units for assembling, storing, and transferring data characters. It is called No. 1 ESS — Arranged with Data Features: No. 1 ESS ADF. Its capacity and reliability exceed that of other known electronic message switches.

In today's business world there is a growing need for rapid and economical delivery of data and printed copy, for simultaneous transmittal to several destinations, and assurance of delivery. Store and forward techniques allow messages for a given destination to be queued