



TECHNICAL REPORT

**Digital cellular telecommunication system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Vocabulary for 3GPP Specifications
(3GPP TR 21.905 version 14.0.0 Release 14)**

STANDARD PREVIEW
Standard (ai)
https://standards.10418.org/standards/et181659-5647-4f9c-b126-e655c9170/etsi-tr-121-905-v14.0.0-



Reference

RTR/TSGS-0021905ve00

Keywords

GSM,LTE,UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:
<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2017.
All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.
GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	5
1 Scope	6
2 References	6
3 Terms and definitions.....	6
0-9	6
A	7
B	8
C	9
D	12
E	13
F	14
G	14
H	15
I	16
J	17
K	18
L	18
M	18
N	21
O	22
P	23
Q	25
R	25
S	28
T	31
U	33
V	34
W	35
X	35
Y	35
Z	35
4 Abbreviations	35
0-9	35
A	35
B	37
C	38
D	40
E	41
F	42
G	43
H	43
I	44
J	45
K	45
L	46
M	47
N	48
O	49
P	50
Q	52
R	52

ITech STANDARD PREVIEW
 (standards.itech.ai)
 Full standard
<https://standards.itech.ai/catalog/standards/sist/ef181639-5047-4f9c-b126-e63516cc919a/etsi-tr-121-905-v14.0.0-2017-03>

S53
T56
U57
V58
W59
X59
Y59
Z59
5 Equations59
Annex A: Change history62
History66

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/ef181659-5647-4f9c-b126-e6356fc919ac/etsi-tr-121-905-v14.0.0-2017-03>

Foreword

This Technical Report (TR) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/ef181259-5647-4f9c-b126-e6356fc919ac/etsi-tr-121-905-v14.0.0>
2017-03

1 Scope

The purpose of this report is to identify specialist technical terms used within the 3GPP project for the purposes of specifying service requirements. The motivations for this are:

- To ensure that editors use terminology that is consistent across specifications.
- To provide a reader with convenient reference for technical terms that are used across multiple documents.
- To prevent inconsistent use of terminology across documents.

This document is a collection of terms, definitions and abbreviations related to the baseline documents defining 3GPP objectives and systems framework. This document provides a tool for further work on 3GPP technical documentation and facilitates their understanding.

The terms, definitions and abbreviations as given in this document are either imported from existing documentation (ETSI, ITU or elsewhere) or newly created by 3GPP experts whenever the need for precise vocabulary was identified.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] Void
- [2] Void
- [3] "The Path towards UMTS - Technologies for the Information Society" – Report #2, UMTS Forum.
- [4] 3GPP TS 23.122: "Non-Access-Statum (NAS) functions related to Mobile Station (MS) in idle mode".
- [5] ETSI TR 180 000: "NGN terminology".
- [6] IEC 60050-161: "International Electrotechnical Vocabulary - Chapter 161: Electromagnetic compatibility".
- [7] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [8] 3GPP TS 23.101: "General Universal Mobile Telecommunications System (UMTS) architecture".
- [9] 3GPP TS 23.682: "Architecture enhancements to facilitate communications with packet data networks and applications".

3 Terms and definitions

0-9

1.8V technology Smart Card: A Smart Card operating at $1.8V \pm 10\%$ and $3V \pm 10\%$.

1.8V technology Terminal: A terminal operating the Smart Card - Terminal interface at $1.8V \pm 10\%$ and $3V \pm 10\%$.

3GPP Generic User Profile (GUP): The 3GPP Generic User Profile is the collection of user related data which affects the way in which an individual user experiences services and which may be accessed in a standardised manner.

3GPP system: A telecommunication system conforming to 3GPP specifications, consisting of a core network, one or more access networks that may be GERAN, UTRAN, E-UTRAN or other access networks such as WLAN, and User Equipment.

3GPP System core network: refers in this specification to an evolved GSM core network infrastructure.

3GPP System coverage: see coverage area.

3GPP System IC Card: An IC card (or 'smartcard') of defined electromechanical specification which contains at least one USIM.

3GPP System mobile termination: part of the 3GPP System Mobile Station which provides functions specific to the management of the radio interface (Um).

3GPP-WLAN Interworking: Used to generically refer to interworking between the 3GPP system and the WLAN family of standards.

3V technology Smart Card: A Smart Card operating at $3V \pm 10\%$ and $5V \pm 10\%$.

3V technology Terminal: A terminal operating the Smart Card - Terminal interface at $3V \pm 10\%$ and $5V \pm 10\%$.

A

A/Gb mode: mode of operation of the MS when connected to the Core Network via GERAN and the A and/or Gb interfaces.

Acceptable Cell: A cell that the UE may camp on to make emergency calls. It must satisfy certain conditions.

Access conditions: A set of security attributes associated with a file.

Access delay: The value of elapsed time between an access request and a successful access (source: ITU-T X.140).

Access Stratum: functional grouping consisting of the parts in the infrastructure and in the user equipment and the protocols between these parts being specific to the access technique (i.e. the way the specific physical media between the User Equipment and the Infrastructure is used to carry information).

Note: For full definition, see 23.101 [8], clause 6.2.

Access Stratum SDU (Service Data Unit): Unit of data transferred over the access stratum SAP (Service Access Point) in the Core Network or in the User Equipment.

Access protocol: A defined set of procedures that is adopted at an interface at a specified reference point between a user and a network to enable the user to employ the services and/or facilities of that network (source: ITU-T I.112).

Accounting: The process of apportioning charges between the Home Environment, Serving Network and User.

Accuracy: A performance criterion that describes the degree of correctness with which a function is performed. (The function may or may not be performed with the desired speed.) (source: ITU-T I.350).

Active communication: a UE is in active communication when it has a CS connection established. For PS active communication is defined by the existence of one or more Activated PDP contexts. Either one or both of the mentioned active communications may occur in the UE.

Active Set: Set of radio links simultaneously involved in a specific communication service between an UE and a UTRAN.

Adjacent Channel Leakage power Ratio (ACLR): The ratio of the average power centered on the assigned channel frequency to the average power centered on an adjacent channel frequency. In both cases the average power is measured with a filter that has Root Raised Cosine (RRC) filter response with roll-off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

Air Interface User Rate: The user rate between Mobile Termination and IWF. For T services it is the maximum possible AIUR not including padding. For NT services it is the maximum possible AIUR.

ALCAP: Generic name for the transport signalling protocols used to set-up and tear-down transport bearers.

Allowable PLMN: A PLMN which is not in the list of forbidden PLMN in the UE.

Allowed CSG list: A list stored in the UE containing the CSG identities and associated PLMN identities of the CSGs to which the subscriber belongs.

Ancillary equipment: Equipment (apparatus), used in connection with a receiver, transmitter or transceiver is considered as an ancillary equipment (apparatus) if:

- the equipment is intended for use in conjunction with a receiver, transmitter or transceiver to provide additional operational and/or control features to the radio equipment, (e.g. to extend control to another position or location); and
- the equipment cannot be used on a stand alone basis to provide user functions independently of a receiver, transmitter or transceiver; and
- the receiver, transmitter or transceiver to which it is connected, is capable of providing some intended operation such as transmitting and/or receiving without the ancillary equipment (i.e. it is not a sub unit of the main equipment essential to the main equipment basic functions).

Applet: A small program that is intended not to be run on its own, but rather to be embedded inside another application

Application: an application is a service enabler deployed by service providers, manufacturers or users. Individual applications will often be enablers for a wide range of services. (UMTS Forum report #2) [3]

Applications / Clients: These are services, which are designed using service capability features.

Application Dedicated File (ADF): an application DF is the entry point to an application on the UICC.

Application Interface: Standardised Interface used by application/clients to access service capability features.

Application protocol: The set of procedures required by the application.

ASCI Generic name to identify the services VGCS, VBS and eMLPP.

Authentication: A property by which the correct identity of an entity or party is established with a required assurance. The party being authenticated could be a user, subscriber, home environment or serving network.

Available PLMN: A PLMN where the UE has found a cell that satisfies certain conditions.

Average power: The thermal power as measured through a root raised cosine filter with roll-off $\alpha = 0.22$ and a bandwidth equal to the chip rate of the radio access mode. The period of measurement shall be one power control group (timeslot) unless otherwise stated.

B

Band category: A group of operating bands for which the same MSR scenarios apply

Base Station: A base station is a network element in radio access network responsible for radio transmission and reception in one or more cells to or from the user equipment. A base station can have an integrated antenna or be connected to an antenna by feeder cables. In UTRAN it terminates the I_{ub} interface towards the RNC. In GERAN it terminates the Abis interface towards the BSC.

Baseline capabilities: Capabilities that are required for a service-less UE to operate within a network. The baseline capabilities for a UE include the capabilities to search for, synchronise with and register (with authentication) to a network. The negotiation of the UE and the network capabilities, as well as the maintenance and termination of the registration are also part of the required baseline capabilities.

Base Station Controller: This equipment in the BSS is in charge of controlling the use and the integrity of the radio resources.

Base station receive period: The time during which the base station is receiving data subframes or UpPTS.

Base Station RF bandwidth: The bandwidth in which a Base Station transmits and receives multiple carriers and/or RATs simultaneously

Base Station RF bandwidth edge: The frequency of one of the edges of the Base Station RF bandwidth

Base Station Subsystem: Either a full network or only the access part of a GERAN offering the allocation, release and management of specific radio resources to establish means of connection between an MS and the GERAN. A Base Station Subsystem is responsible for the resources and transmission/reception in a set of cells.

Baseline Implementation Capabilities: Set of Implementation capabilities, in each technical domain, required to enable a UE to support the required Baseline capabilities.

Basic OR Basic Optimal Routeing

Basic telecommunication service: This term is used as a common reference to both bearer services and teleservices.

Bearer: A information transmission path of defined capacity, delay and bit error rate, etc.

Bearer capability: A transmission function which the UE requests to the network.

Bearer independent protocol: (UICC) Mechanism by which the ME provides the (U)SIM applications on the UICC with access to the data bearers supported by the ME and the network.

Bearer service: A type of telecommunication service that provides the capability of transmission of signals between access points.

Best effort QoS: The lowest of all QoS traffic classes. If the guaranteed QoS cannot be delivered, the bearer network delivers the QoS which can also be called best effort QoS.

Best effort service: A service model which provides minimal performance guarantees, allowing an unspecified variance in the measured performance criteria.

Billing: A function whereby CDRs generated by the charging function are transformed into bills requiring payment.

Broadcast: A value of the service attribute "communication configuration", which denotes unidirectional distribution to all users (source: ITU-T I.113).

Byte code: (UICC) A hardware machine independent representation of a primitive computer operation that serves as an instruction to a software program called an interpreter or a virtual machine that simulates the hypothetical computer's central processing unit. code generated by a Java compiler and executed by the Java interpreter.

C

Cable, Connector, and Combiner Losses (Transmitter) (dB): The combined losses of all transmission system components between the transmitter output and the antenna input (all losses in positive dB values).

Cable, Connector, and Splitter Losses (Receiver) (dB): The combined losses of all transmission system components between the receiving antenna output and the receiver input.

CAC (Connection Admission Control): A set of measures taken by the network to balance between the QoS requirements of new connections request and the current network utilisation without affecting the grade of service of existing/already established connections.

Call: a logical association between several users (this could be connection oriented or connection less).

Carrier: The modulated waveform conveying the E-UTRA, UTRA or GSM/EDGE physical channels

Carrier frequency: center frequency of the cell

Camped on a cell: The UE is in idle mode and has completed the cell selection/reselection process and has chosen a cell. The UE monitors system information and (in most cases) paging information. Note that the services may be limited, and that the PLMN may not be aware of the existence of the UE within the chosen cell.

Capability Class: A piece of information which indicates general 3GPP System mobile station characteristics (e.g. supported radio interfaces,...) for the interest of the network.

Card session: A link between the card and the external world starting with the ATR and ending with a subsequent reset or a deactivation of the card.

CBS DRX cycle: The time interval between successive readings of BMC messages.

Cell: Radio network object that can be uniquely identified by a User Equipment from a (cell) identification that is broadcasted over a geographical area from one UTRAN Access Point. A Cell is either FDD or TDD mode.

Cell Radio Network Temporary Identifier (C-RNTI): The C-RNTI is a UE identifier allocated by a controlling RNC and it is unique within one cell controlled by the allocating CRNC. C-RNTI can be reallocated when a UE accesses a new cell with the cell update procedure.

Cellular Text telephone Modem (CTM): A modulation and coding method intended for transmission of text in voice channels for the application of real time text conversation.

Channel bandwidth: The RF bandwidth supporting a single RF carrier with the transmission bandwidth configured in the uplink or downlink of a cell. The channel bandwidth is measured in MHz and is used as a reference for transmitter and receiver RF requirements.

Channel edge: The lowest and highest frequency of the carrier, separated by the channel bandwidth.

Chargeable Event: An activity utilising telecommunications network infrastructure and related services for user to user communication (e.g. a single call, a data communication session or a short message), or for user to network communication (e.g. service profile administration), or for inter-network communication (e.g. transferring calls, signalling, or short messages), or for mobility (e.g. roaming or inter-system handover), which the network operator wants to charge for. The cost of a chargeable event may cover the cost of sending, transporting, delivery and storage. The cost of call related signalling may also be included.

Charged Party: A user involved in a chargeable event who has to pay parts or the whole charges of the chargeable event, or a third party paying the charges caused by one or all users involved in the chargeable event, or a network operator.

Charging: A function whereby information related to a chargeable event is formatted and transferred in order to make it possible to determine usage for which the charged party may be billed.

Charging Data Record (CDR): A formatted collection of information about a chargeable event (e.g. time of call set-up, duration of the call, amount of data transferred, etc) for use in billing and accounting. For each party to be charged for parts of or all charges of a chargeable event a separate CDR shall be generated, i.e. more than one CDR may be generated for a single chargeable event, e.g. because of its long duration, or because more than one charged party is to be charged.

Cipher key: A code used in conjunction with a security algorithm to encode and decode user and/or signalling data.

Closed group: A group with a pre-defined set of members. Only defined members may participate in a closed group.

Closed Subscriber Group (CSG): A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells).

Coded Composite Transport Channel: A data stream resulting from encoding and multiplexing of one or several transport channels.

Common Channel: A Channel not dedicated to a specific UE.

Confidentiality: The avoidance of disclosure of information without the permission of its owner.

Connected Mode: Connected mode is the state of User Equipment switched on and an RRC connection established.

Connection: A communication channel between two or more end-points (e.g. terminal, server etc.).

Connection mode: The type of association between two points as required by the bearer service for the transfer of information. A bearer service is either connection-oriented or connectionless. In a connection oriented mode, a logical association called *connection* needs to be established between the source and the destination entities before information can be exchanged between them. Connection oriented bearer services lifetime is the period of time between the

establishment and the release of the connection. In a connectionless mode, no connection is established beforehand between the source and the destination entities; the source and destination network addresses need to be specified in each message. Transferred information cannot be guaranteed of ordered delivery. Connectionless bearer services lifetime is reduced to the transport of one message.

Connectionless (for a bearer service): In a connectionless bearer, no connection is established beforehand between the source and the destination entities ; the source and destination network addresses need to be specified in each message. Transferred information cannot be guaranteed of ordered delivery. Connectionless bearer services lifetime is reduced to the transport of one message.

Connectionless service: A service which allows the transfer of information among service users without the need for end-to-end call establishment procedures (source: ITU-T I.113).

Continuous phenomena (continuous disturbance): Electromagnetic disturbance, the effects of which on a particular device or equipment cannot be resolved into a succession of distinct effects (IEC 60050-161 [6]).

Control channel: A logical channel that carries system control information.

Controlling RNC: A role an RNC can take with respect to a specific set of UTRAN access points. There is only one Controlling RNC for any UTRAN access point. The Controlling RNC has the overall control of the logical resources of its UTRAN access point's.

Conversational service: An interactive service which provides for bi-directional communication by means of real-time (no store-and-forward) end-to-end information transfer from user to user (source: ITU-T I.113).

Core network: An architectural term relating to the part of 3GPP System which is independent of the connection technology of the terminal (eg radio, wired).

Core Network Operator: Operator that offers core network services.

Corporate code: Code which when combined with the network and SP codes refers to a unique Corporate. The code is provided in the GID2 file on the (U)SIM (see Annex A.1.) and is correspondingly stored on the ME.

Corporate code group combination of the Corporate code and the associated SP and network codes.

Corporate personalisation: Allows a corporate customer to personalise MEs that he provides for his employees or customers use so that they can only be used with the company's own (U)SIMs.

Coverage area (of a mobile cellular system): An area where mobile cellular services are provided by that mobile cellular system to the level required of that system.

Coverage area: Area over which a 3GPP System service is provided with the service probability above a certain threshold.

CSG cell: A cell, part of the PLMN, broadcasting a specific CSG Identity. A CSG cell is accessible by the members of the closed subscribers group for that CSG Identity. All the CSG cells sharing the same identity are identifiable as a single group.

CSG Identity (CSGID): An identity broadcast by a CSG cell or cells and used by the UE to facilitate access for authorised members of the associated Closed Subscriber Group.

CSG Indicator: An indication transmitted on the broadcast channel of the CSG cell that allows the UE to identify such as CSG cell.

CSG manager: A CSG manager can, under the operator's supervision, add, remove and view the list of CSG members.

Current directory: The latest MF or DF selected on the UICC.

Current EF: The latest EF selected.

Current serving cell: This is the cell on which the MS is camped.

D

Data field: Obsolete term for Elementary File.

Data Object: Information coded as TLV objects, i.e. consisting of a Tag, a Length and a Value part.

Dedicated Channel: A channel dedicated to a specific UE.

De-personalisation: Is the process of deactivating the personalisation so that the ME ceases to carry out the verification checks.

Dedicated File (DF): A file containing access conditions and, optionally, Elementary Files (EFs) or other Dedicated Files (DFs).

Delivered QoS: Actual QoS parameter values with which the content was delivered over the lifetime of a QoS session.

Demand service: A type of telecommunication service in which the communication path is established almost immediately, in response to a user request effected by means of user-network signalling (source: ITU-T I.112).

Dependability: A performance criterion that describes the degree of certainty (or surety) with which a function is performed regardless of speed or accuracy, but within a given observational interval (source: ITU-T I.350).

Destination user: Entity to which calls to the General Packet Radio Service (GPRS) are directed.

Directory: General term for the MF or a DF on the UICC.

Directory Number: A string consisting of one or more of the characters from the set {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, *, #, a, b, c} associated with a nature of address indicator and number plan indicator. When using the public MMI for the control of supplementary services however, * and # cannot be part of any SC or SI field.

NOTE 1: No such restriction on the SC and SI fields exists when using other (e.g. menu-driven) MMI for the control of supplementary services.

NOTE 2: When using the public MMI, certain limitations on the use of one and two digit directory numbers may apply. The use of other MMI can remove these restrictions.

NOTE 3: This definition is not intended to require the support of all these characters in the MMI itself.

Distribution service: Service characterised by the unidirectional flow of information from a given point in the network to other (multiple) locations (source: ITU-T I.113).

DL RS power: The resource element power of Downlink Reference Symbol.

Domain: The highest-level group of physical entities. Reference points are defined between domains.

Domain Specific Access Control: Access control functionality for access barring in either domain (i.e. CS domain or PS domain).

Donor coupling loss: the coupling loss between the repeater and the donor base station.

Donor network: The subscription network from which a number is ported in the porting process. This may or may not be the number range owner network.

Downlink: Unidirectional radio link for the transmission of signals from a UTRAN access point to a UE. Also in general the direction from Network to UE.

Downlink operating band: The part of the operating band designated for downlink.

Downlink Pilot Timeslot: Downlink part of the special subframe (for TDD operation)

Drift RNS: The role an RNS can take with respect to a specific connection between a UE and UTRAN. An RNS that supports the Serving RNS with radio resources when the connection between the UTRAN and the User Equipment need to use cell(s) controlled by this RNS is referred to as Drift RNS.