TCCA Technical Forum Paper

List of TIP Features

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Please note that this document is a snapshot of the feature status at the time of its creation. The TCCA Technical Forum and its Working Groups are constantly working on the maintenance of existing features and the development of new features, which may already exist at the time of reading this document and before the next update.

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Available TIP Features

The list below show the features for which a TETRA Interoperability Profile (TIP) is available and the Certifiable Items for each of the features as they will be shown on a IOP Certificate.

It is the decision of the individual manufacturer whether to implement a certain feature or sub-feature / certifiable item in its product or not. Please contact the individual manufacturers directly for information of the manufacturer's product feature implementation roadmap.

Please note that circulation of the individual TIP documents is restricted to TCCA Members.

1 V+D Air Interface Specifications (001)

Part	Name

01	**Core**
	- **Registration**
	  - Initial registration
	  - SwMI initiated location updating
	  - LA timer based Periodic location updating
	  - De-registration
	- **Group Management**
	  - Single group attachment
	  - Multiple group attachment
	  - MS initiated group detachment
	  - SwMI initiated group detachment
	  - SwMI initiated group attachment
	- **Group call**
	  - Normal group call
	  - Late entry
	  - Priority Group scanning
	  - Call setup modifications
	  - Resource Queuing based on Call Priority
	  - Broadcast Call
	  - Limited coverage notification
	- **Individual call**
	  - Simplex individual call
	  - Duplex individual call
	  - Call setup modifications
	  - Resource Queuing based on Call Priority
	  - Indication of imminent call disconnection
	- **Status messages**
	  - Individual addressed Status transfer
	  - Group addressed Status transfer
	- **Pre-emptive Priority Call**
	  - Pre-emption of Resources
	  - Pre-emption of Busy Users
	- **Emergency Call**
	  - Pre-emption of Resources
	  - Pre-emption of Busy Users
	  - Call setup modifications
	  - Call disconnection by non-call owner
	- **Cell Re-selection**
	  - Undeclared
	  - Unannounced
	  - Announced - with Call Restoration
	  - Announced - without Call Restoration
	  - Expedited
	  - Graceful Service Degradation Mode (GSDM)
	- **PSTN interconnect**

Part	Name
	- TETRA Originated Call - PSTN Originated Call - DTMF over-dial - Emergency Telephone Calls - **MS-ISDN Numbering** - MS ISDN - Voice Call - MS-ISDN Status - **In Call Signalling** - Slow Signalling on Traffic Channel (SACCH) - Fast Signalling on Traffic Channel (FACCH) - **Subscriber Class Procedures** - Cell Selection based on Subscriber Class - Subscriber Class Delivery during Location Update - Use of Subscriber Class Preference Levels - **Common Secondary Control Channels** - One C-SCCH per cell - Two C-SCCH per cell - Three C-SCCH per cell - **BS Fallback Operation** - Switch to/from BS Fallback Operation - Roaming to avoid a cell in BS Fallback Operation - Roaming to and from a cell in BS Fallback operation offering some services - Services with BS Fallback Operation - Ignore a cell in Fallback Operation - User selectable Fallback behaviour - **Energy Economy Mode** - Energy Economy Mode Operation - **Transmit Inhibit** - TXI Activation & De-Activation - TXI Activation & De-Activation with TxI Status available to the Dispatcher - Receipt of group addressed service during TXI - **Mixed band operation** - Mixed band operation, inter-cell - Mixed band operation, intra-cell - Mixed band operation, Full
02	**Short Data Service** - **SDS Type 1, 2 or 3** - SDS Type 1 - SDS Type 2 - SDS Type 3 - **SDS-TL** - Individually Addressed - Group Addressed - Using MS-ISDN dialling - SDS Reception - Using UCS2 coding scheme - Using 7-bit coding scheme - Using 8-bit Latin 1 coding scheme - Using 8-bit Latin/Cyrillic coding scheme - Using 8-bit Latin 9 coding scheme - **Store and Forward** - Individually Addressed - Group Addressed - **Multipart SDS** - Multipart SDS
03	**Dynamic Group Number Assignment** - **Support for individually addressed DGNA** - Support for individually addressed DGNA assignment without attachment - Support for individually addressed DGNA assignment with attachment as

Part	Name
	selected group - Support for individually addressed DGNA assignment with attachment as scanned group - Support for individually addressed DGNA assignment with rejected attachment - Support for individually addressed assigment for pre-programmed group - **Support for group addressed DGNA** - Support for group addressed DGNA assignment - Management of 'group assignment lifetime' - Support for group addressed DGNA deassignment - **Tolerance of unsupported DGNA functions** - MS tolerance of unsupported individual addressed DGNA signalling - MS tolerance of unsupported group addressed DGNA signalling
04	**Authentication** - **SwMI Initiated (non-mutual) Authentication** - Attach with authentication - Roaming with authentication - SwMI rejects MS during authentication - MS rejects SwMI during authentication - **SwMI Initiated Authentication made Mutual by MS** - Attach with authentication - Roaming with authentication - **TEI Query** - TEI Query Operation
05	**Packet Data - TETRA Enhanced Data Service** - **Context Management** - Context Activation - User authentication - **Single Slot Packet Data** - Data Transfer - Cell re-selection - Packet Data Channel sharing - **Multi Slot Packet Data** - Data Transfer - **TEDS** - TEDS with Context Activation - TEDS Data Transmission, using LLC Optimisation - TEDS Cell Reselection, using LLC Optimisation *Note: the TIC-RT for TEDS will be created on demand if requested for a test session* - **Mixed band operation** - Mixed band operation, inter-cell - Mixed band operation, intra-cell - Mixed band operation, Full
06	**Air Interface Migration** - **Registration** - Migrating - Subscriber Class Profile for migrating MS - **Group management** - Local group attachment on Foreign SwMI - Foreign group attachment - DGNA - **Group call** - Group call to local group on foreign SwMI - Group call to foreign group - SwMI-dependent emergency group call to local group - **Individual call** - SSI/TSI addressed - FSSN addressed - MS-ISDN addressed

Part	Name

	- **Status/SDS message**
	  - Individually addressed SDS
	  - Group addressed SDS
	  - Individually addressed Status
	  - Group addressed Status
	  - SDS Store & Forward
	  - TxI Status
	- **Location Information Protocol**
	  - Use of ITSI as location information destination in LIP reports
	  - LIP reporting lifetimes
	- **Security**
	  - Air Interface Encryption, Class 3
	  - E2E Encryption, OTAK key delivery

07	**Fleet Specific Short Number**
	- **Fleet Specific Short Numbering**
	  - FSSN Addressed Individual Call
	  - FSSN as CPI/TPI in Group Call
	  - FSSN Addressed Status Messages
	  - FSSN Addressed SDS Text Messages

08	**Testing Requirements**
	- **TETRA Test mode**
	  - Confirmation
	  - Rejection
	  - Ending TT mode
	- **Test Broadcast Channel**
	  - Registration
	  - Rejection
	- **TT Loopback**
	  - With Bad Frame Indication
	  - Without Bad Frame Indication

09	**Ambience Listening**
	- **Ambience Listening**
	  - SS-AL Call Setup
	  - MS initiated SS-AL disconnection
	  - No Indication to affected user
	- **Interaction with Transmit Inhibit**
	  - AL can override TxI
	  - AL cannot override TxI

10	**End to End Encryption**
	- **E2EE Voice Call**
	  - Individual (P2P) call
	  - Group (P2MP) call
	  - Clear Voice Override (CVO): Acceptance
	  - Clear Voice Override (CVO): User Initiated
	  - Clear Voice Override (CVO): Automatic
	  - OTAK key delivery
	- **E2EE Short Data**
	  - Short Data
	  - Multipart Short Data
	  - Short Data Reception
	  - Multipart Short Data Reception

11	**Air Interface Encryption**
	- **Security Class 2 Air Interface Encryption**
	  - Location Updating and AI Signalling Protection
	  - TM-SCK provisioning during location updating
	  - Communications between parties using encryption
	  - Communications between clear and encrypted parties
	  - Communications between encrypted parties on a channel designated to

Part	Name
	operate in clear - OTAR of TM-SCK - Change of TM-SCK - Packet Data with Class 2 Air Interface Encryption - Tolerance of SwMI not supporting SCK-OTAR - **Security Class 3 Air Interface Encryption** - Clear Location Updating and AI Signalling Protection - Encrypted Location Updating and AI Signalling Protection - DCK Forwarding at MS request - DCK Forwarding by SwMI (without MS request) - DCK Retrieval - CCK provisioning during location updating - Communications between parties using encryption - Communications between clear and encrypted parties - Communications between encrypted parties on a channel designated to operate in clear - OTAR of CCK - Change of CCK - Packet Data with Class 3 Air Interface Encryption - **Security Class 3G Air Interface Encryption** - GCK Key Association setting - Communications between parties using encryption - Communications between clear and encrypted parties - OTAR of GCK - Change of GCK - **Management of CMG and GSKO** - OTAR and change of CMG and GSKO - **Key Status demand** - SCK Key Status demand - GCK Key Status demand - GSKO Key Status demand - **Change of Security Class for Fallback operation** - Seamless change to Security Class 2 for BS Fallback operation - Non-seamless change to Security Class 2 for BS Fallback operation - Provisioning of TM-SCK for fallback to Security Class 2 operation - Change to Security Class 1 for BS Fallback operation - **Change of Security Class (other than for Fallback operation)** - Change between Security Class 3 and Security Class 3G - Change between Security Class 2 and Security Class 3 - Change from Security Class 3G to Security Class 2 - **Key Management for Secure Direct Mode Operation** - OTAR of DM-SCK - Change of DM-SCK
12	**Service Interaction** - **MS initiated Service Interaction** - MS initiated Circuit Mode Call during another Circuit Mode Call - MS initiated Circuit Mode Call during Packet Mode Transfer - MS initiated Packet Mode Transfer during Circuit Mode Call - **SwMI initiated Service Interaction** - SwMI initiated Circuit Mode Call during another Circuit Mode Call - SwMI initiated Circuit Mode Call during Packet Mode Transfer - SwMI initiated Packet Mode Transfer during Circuit Mode Call - **Call Waiting** - Call Waiting in Individual Call - Call Waiting in Group Call
13	**Enable / Disable** - **Enable and temporary disable of an MS** - Enable and temporary disable of an MS without authentication - Enable and temporary disable of an MS with authentication

Part	Name
	- Registration of a temporary disabled MS - Rejection of applicable invalid enable/disable requests - Removable SIMs do not affect the subscriber or equipment that has been enabled/disabled - Disabling of an MS during a call or while on the PDCH - **Permanent disable of an MS** - Permanent disable of an MS with authentication - Permanently Disabled MS cannot send air interface signalling
14	**TKD** - **Delivery of Authentication Data** - Authentication Key Delivery - ITSI Delivery - **Delivery of SCK** - SCK Delivery to SCK delivery - SCK Delivery to SwMI - SCK Delivery to SCK loading - **Delivery method** - Plain text on physical media - Encrypted text on physical media - Electronic transfer
15	**Call Authorized by Dispatcher** - **Call Authorised by Dispatcher - Compliant** - No voice call with dispatcher - Voice call with dispatcher - **Call Authorised by Dispatcher - Tolerant** - No voice call with dispatcher - Individual voice call with dispatcher - Group voice call with dispatcher
16	**Air to Ground** - **Air to Ground** - Distance reporting - Cell re-selection
17	**Radio User Assignment** - **Radio User Assignment** - Radio User Assignment at Location Updating - Dispatcher initiated Radio User Assignment - Radio User Dis-assignment
18	**Circuit Mode Data** - **Individual Data Call** - Individual Circuit Mode Data Call - **Group Data Call** - Broadcast Circuit Mode Data Call - Point to Multipoint Circuit Mode Data Call
19	**LIP** - **Location Information Protocol** - LIP over SDS - LIP over Packet Data - Time based reporting - Distance based reporting - NOT TESTABLE - Reporting using Short reports - Reporting using Long reports - Reporting Enable & Disable - User control of Reporting - Temporary reporting control - Trigger modification - Control of Basic Location Parameters - Immediate Location Reporting - Reporting Lifetimes

Part	Name
	- Error Reporting using Long Reports - Error Reporting using Short Reports - Positioning on Individual Call Setup
20	**Call Forwarding** - **Call Forwarding Unconditional** - Call Forwarding Unconditional Individual Call - Call Forwarding Unconditional SDS - Call Forwarding Unconditional Status - **Call Forwarding Conditional** - Call Forwarding Conditional Individual Call - **Call Forwarding Information Displayed** - Call Forwarding Information Displayed - **Management of Call Forwarding** - Change of Call Forwarding Activation Status by Served User - Setting of Call Forwarding Parameters by Served User
21	**Callout** - **Full Calllout** - Individually Addressed Full Callout with request for Terminal Receipt message and with request for User Receipt message - Group Addressed Full Callout without request for Terminal Receipt message and without request for User Receipt message - Using current selected group during Full Callout - Full Callout with immediate change to Callout Group - Full Callout with change to Callout Group on non-rejecting user response - Full Callout with rejecting User Receipt message - Full Callout with timeout for User Receipt message - Callout Incident Information messages - Group Call to Callout Group - End of Full Callout - **Simple Callout** - Individually Addressed Callout with request for Terminal Receipt message and with request for User Receipt message - Individually Addressed Callout with request for Terminal Receipt message and without request for User Receipt message - Group Addressed Callout without request for Terminal Receipt message and without request for User Receipt message - Group Addressed Callout without request for Terminal Receipt message and with request for User Receipt message - Simple Callout with rejecting User Receipt message - Simple Callout with timeout for User Receipt message - **Interaction with other services and events** - Interaction with previous Callout - Interaction with emergency call - Interaction with non-emergency call - Interaction with data and status - Interaction with local services - Manual exit - **Callout Test and Callout Availability** - Callout Test - Callout Availability - Callout Availability request - **Callout Text and Callout Pre-Coded Status** - Callout Text - Concatenated Callout Text using Callout Specific Concatenation - Concatenated Callout Text using mSDS - Callout Pre-Coded Status - **Storage of Callout Information** - Viewing Callout information from previous Callout(s) - Deletion of Callout information from previous Callout(s)

Part	Name
	- **Graceful Service Degradation Mode (GSDM)** - Graceful Service Degradation Mode (GSDM)

22	**Direct Mode Over The Air Management**
	- **Direct Mode Over The Air Management**
	  - Group assignment
	  - Group deassignment
	  - Group change
	  - Group interrogate

2 V+D Air Interface Guide for Implementation (101)

Part	Name
01	**Multipart Short Data Service** *Note: the Test Plan for mSDS will be created on demand if requested for a test session* *Note: the TIC-RT for mSDS will be created on demand if requested for a test session*

02	**Migration**
	- **Migration**
	  - Network selection
	  - Group selection
	  - Network and group name
	  - Calling Party Identity / Talking Party Identity
	  - Full ITSI dialling

3 DMO Direct Mode Interface Specifications (002)

Part	Name

01	**DMO Core**
	- **Registration**
	  - Activation/Deactivation
	  - RF Carrier Selection
	- **Group Call**
	  - Intra-MNI Group Calls
	  - Inter-MNI Group Calls
	  - Emergency Group Calls
	  - Pre-emptive priority Calls
	  - Group Call Maintenance
	  - Late Entry Group Calls
	  - Open Group Calls
	- **Individual Call**
	  - Intra-MNI Individual Calls
	  - Inter-MNI Individual Calls
	  - Pre-emptive priority Calls
	  - Individual Call maintenance
	  - Individual Call with Presence Check
	  - Individual call without Presence Check
	  - Individual Late Entry
	- **Status Call**
	  - Individual Status Calls
	  - Group Status call
	  - Status sent in a Voice Call
	  - Status sent out of a Call
	- **SDS TL**
	  - Individual intra-MNI SDS-TL, unacknowledged, 8 bit
	  - Individual inter-MNI SDS-TL, unacknowledged, 8 bit
	  - Group SDS-TL intra-MNI, unacknowledged, no reports, 8 bit
	  - Open TSI addressed SDS-TL, unacknowledged, no reports, 8 bit

Part	Name
	- Multipart SDS-TL

02	**DMO Gateway**
	- **Registration**
	  - Registration
	- **Presence Signal**
	  - Presence Signal
	- **Usage Restriction Types**
	  - Single Address
	  - Two Addresses
	  - Three addresses
	  - single MNI
	  - Complying with URT Validity Time
	- **Individual Call**
	  - DMO to TMO indiivdual call
	  - TMO to DMO indiivdual call
	- **Individual Call Release**
	  - Individual call release with DM-GATE as DMO slave
	  - Individual call release with DM-GATE as DMO master
	- **Group Call**
	  - DMO to TMO group call
	  - TMO to DMO group call
	  - Call Maintenance (including Changeover)
	- **Status**
	  - Group addressed Status
	  - Individually addressed Status
	- **SDS-TL**
	  - Group Addressed intra-MNI SDS-TL, unacknowledged, no reports
	  - Open TSI Addressed SDS-TL, unacknowledged, no reports
	  - Individually Addressed intra-MNI SDS-TL, unacknowledged
	  - Individually Addressed inter-MNI SDS-TL, unacknowledged
	  - Multipart SDS-TL
	- **Pre-emption**
	  - Pre-emption of DMO terminal
	  - Pre-emption of Gateway

03	**DMO Repeater Type 1**
	Type 1A Repeater
	- **Presence Signal**
	  - Presence Signal on free channel
	  - Presence Signal on occupied channel
	- **DM-MS authorization**
	  - Usage Restriction Type
	  - Validity Time
	- **Group call**
	  - Intra-MNI Group Calls
	  - Inter-MNI Group Calls
	- **Individual Call**
	  - Individual Call with Presence Check
	  - Individual call without Presence Check
	- **Call Maintenance**
	  - Changeover
	  - Pre-emption
	  - Procedures in Occupation
	  - Procedures in Reservation
	- **Status Messages**
	  - Intra-MNI Status Calls
	  - Individual Status Calls
	  - Group Status call
	  - Status sent in a Voice Call
	  - Status sent out of a Call

Part	Name
	- Use as parallel DM-MS for Status - **SDS TL** - Group Addressed Intra-MNI SDS-TL - Open TSI Addressed SDS-TL - Individually Addressed intra-MNI SDS-TL - Individually Addressed inter-MNI SDS-TL - Multipart SDS-TL - Use as parallel DM-MS for SDS-TL **Type 1B Repeater** - **Presence Signal** - Presence Signal on free channel - Presence Signal on occupied channel - **DM-MS authorization** - Usage Restriction Type - Validity Time - **Group call** - Intra-MNI Group Calls - Inter-MNI Group Calls - Use as parallel DM-MS for Group Call - **Individual Call** - Individual Call with Presence Check and Call Release - Individual call without Presence Check - **Call Maintenance** - Changeover - Pre-emption - Procedures in Occupation - Procedures in Reservation - **Status Messages** - Intra-MNI Status Calls - Individual Status Calls - Group Status call - Status sent in a Voice Call - Status sent out of a Call - Use as parallel DM-MS for Status - **SDS-TL** - Group Addressed Intra-MNI SDS-TL - Open TSI Addressed SDS-TL - Individually Addressed intra-MNI SDS-TL - Individually Addressed inter-MNI SDS-TL - Multipart SDS-TL - Use as parallel DM-MS for SDS-TL
04	**DMO End to End Encryption** - **Basic DMO E2E encrypted call** - DMO E2E encrypted individual call - DMO E2E encrypted group call - DMO E2E encrypted group accepting clear call - DMO E2E encrypted group call late entry - DMO E2E encrypted call rejected - **DMO E2E encrypted SDS** - DMO E2E encrypted SDS sending - DMO E2E encrypted SDS receiving - DMO E2E encrypted multipart SDS sending - DMO E2E encrypted multipart SDS receiving - **DMO E2E encrypted call via Gateway** - DMO E2E encrypted individual call - DMO E2E encrypted group call - DMO E2E encrypted group accepting clear call - DMO E2E encrypted group call late entry - DMO E2E encrypted call rejected

Part	Name

	- **DMO E2E encrypted call via Type 1A Repeater**
	  - DMO E2E encrypted individual call
	  - DMO E2E encrypted group call
	  - DMO E2E encrypted group call accepting clear call
	  - DMO E2E encrypted group call late entry
	  - DMO E2E encrypted call rejected
	- **DMO E2E encrypted call via Type 1B Repeater**
	  - DMO E2E encrypted individual call
	  - DMO E2E encrypted group call
	  - DMO E2E encrypted group call accepting clear call
	  - DMO E2E encrypted group call late entry
	  - DMO E2E encrypted call rejected

05	**DMO Air Interface Encryption**
	- **DMO AIE Encryption**
	  - Encrypted Group Calls
	  - Encrypted Individual Calls
	  - Encrypted Status messages
	  - Pre-emption of encrypted activity
	  - Handling mismatched keys
	  - Encrypted SDS-TL messages
	Gateway
	- **DMO AIE Encryption**
	  - Encrypted Group Calls
	  - Encrypted Individual Calls
	  - Encrypted Status messages
	  - Pre-emption of encrypted activity
	  - Handling mismatched keys
	  - Encrypted SDS-TL messages
	Repeater
	- **DMO AIE Encryption - via Repeater Type 1A**
	  - Encrypted Group Calls
	  - Encrypted Individual Calls
	  - Encrypted Status messages
	  - Pre-emption of encrypted activity
	  - Handling mismatched keys
	  - SDS-TL messages
	- **DMO AIE Encryption - via Repeater Type 1B**
	  - Encrypted Group Calls
	  - Encrypted Individual Calls
	  - Encrypted Status messages
	  - Pre-emption of encrypted activity
	  - Handling mismatched keys
	  - SDS-TL messages

06	**DMO Air Interface Protocol Interaction** *Note: the Test Plan for DAIPI will be created on demand if requested for a test session* *Note: the TIC-RT for DAIPI will be created on demand if requested for a test session*

4 DMO Direct Mode Interface Guide for Implementation (102)

Part	Name

01	**DMO Edge of Range Indication**
	- **DMO Edge of Range Indication**
	  - DERI Level Activation
	  - DERI MMI

5 ISI Inter-System Interface Specifications (003)

Part	Name

01	**ISI Mobility Management**
	- **ISI Migration Service**
	  - ISI Migration Service without Authentication
	  - ISI Migration Service with Authentication
	  - ISI Re-Authentication of Migrated MS
	  - ISI Migration Service between two Foreign SwMIs
	  - ISI Deregistration and return to Home SwMI
	- **Linked Group Attachment/Detachment Service**
	  - Linked Group Attachment/Detachment

02	**ISI Individual Call**
	- **ISI Individual Call**
	  - ISI Individual Simplex Call
	  - ISI Individual Duplex Hook Call
	  - Handling of Call Establishment Failures
	- **Resource Allocation Policy**
	  - Permanent Resource Allocation
	  - Temporary Resource Allocation
	  - Mixed Resource Allocation
	- **Routing Methods (for 3 SwMI configurations)**
	  - ISI Individual Call using forward switching based on Called SwMI decision
	  - ISI Individual Call using forward switching based on Calling SwMI decision
	  - ISI Individual Call using re-routing
	- **MS-ISDN**
	  - MSISDN as CPI in PSTN originated calls over ISI
	- **Queuing for resources in the Visited or Forward Switching SwMIs**
	  - Queuing for resources in the Visited SwMI
	  - Queuing for resources in the forward switching SwMI
	- **Queing for resources in Originating SwMI, identical resource allocation**
	  - Permanent resource allocation
	  - Temporary resource allocation
	- **Queing for resources in the Originating SwMI, mixed resource allocation**
	  - No permission to release resources
	  - Permission to release resources
	  - Called SwMI permitted, Visited SwMI not permitted to release resources
	- **Queing for resources in the Originating and Visited SwMI, identical resource allocation**
	  - Permanent resource allocation
	  - Temporary resource allocation
	- **Queing for resources in the Originating and Visited SwMI, mixed resource allocation**
	  - No permission to release resources, Visited SwMI supporting temporary resource allocation
	  - No permission to release resources, Visited SwMI supporting permanent resource allocation
	  - Permission to release resources
	  - Called SwMI permitted, Visited SwMI not permitted to release resources

03	**ISI Short Data Service**
	- **Individually addressed ISI Short Data Service**
	  - Individual Status message over ISI
	  - Individual SDS-TL message over ISI
	  - Individual Status message over ISI, forwarding to a third SwMI
	  - Individual SDS-TL message over ISI, forwarding to a third SwMI
	  - Individual SDS-TL message over ISI using MS-ISDN as CPI
	- **Group addressed ISI Short Data Service**
	  - Group addressed Status message over ISI
	  - Group addressed SDS message over ISI
	  - Group addressed SDS message over ISI, CSwMI using forward address and

Part	Name
	PSwMI accepting forward addres - **Transmit Inhibit Status' status messages** - Transmit Inhibit Status' status messages
04	**ISI Lower Layers** - **Lower Layers – PSS1** - **Lower Layers – IP/SIP** *Note: Lower Layers are tested implicitly by correct working of higher layers services*
05	- **Speech Format** *Note: Speech Format is tested implicitly by correct audio reception*

06	**ISI Group Call**
	- **Normal ISI Group Call**
	  - Normal ISI Group Call
	  - Delayed ISI Group Call Setup
	  - Late Entry triggered by a timer
	  - Late Entry triggered by PTT
	- **Transmission control**
	  - Transmission queuing management
	  - Transmission pre-emption management
	- **Emergency Group Call**
	  - Emergency Group Call
	- **Abnormal Cases**
	  - Abnormal Cases
	- **Use of Linked Group Attachment**
	  - Use of Linked Group Attachment

6 ISI Inter-System Interface Guide for Implementation (103)

Part	Name
01	**Address ranges** - **Pre-Provisioning of Address Ranges** - Pre-provisioning of address ranges for allowed visitors

7 PEI Peripheral Equipment Interface Specifications (004)

Part	Name

01	**PEI Core (AT Commands)**
	- **PEI Link Management**
	  - PEI Link Management, Abortable Commands
	  - PEI Link Management, Mandatory Commands
	  - PEI Link Management, Optional Commands
	- **Individual Call Voice**
	  - Individual Call Voice, Direct Call Setup
	  - Individual Call Voice, Hook Call Setup
	  - Individual Call Voice, Call Setup Failures
	  - Individual Call Voice, Call Setup Modification by SwMI
	  - Individual Call Voice, Call Setup Modification by Called Party
	- **Group Management**
	  - Group Management, Group Attachment, Success
	  - Group Management, Single Group Attachment, Failure
	  - Group Management, Multiple Group Rejection, Failure
	  - Group Management, Dynamic Tests
	- **Group Call**
	  - Group Call, Call Setup
	  - Group Call, Call Maintenance
	  - Group Call, Call Setup Modification by SwMI
	- **Telephony Calls**
	  - Telephony Calls, Incoming Call Setup, Success

Part	Name
	- Telephony Calls, Incoming Call Setup, Queued - Telephony Calls, Outgoing Call Setup, Success - Telephony Calls, Outgoing Call Setup, Queued - Telephony Calls, Call Setup Failures - **Emergency Calls** - Emergency Calls, Individual Calls - Emergency Calls, Group Calls - Emergency Calls, Telephony Calls - **Short Data** - Short Data, SDS Types 1,2,3 - Short Data, SDS-TL - **Status** - Status - **Packet Data** - Packet Data, Successful - Packet Data, Failure - **Terminal Management** - Terminal Management, System Related Functions - Terminal Management, Terminal Related Functions - Terminal Management, Service Profile
02	**Supporting Direct Mode Air Interface Operation** *Note: the TIC-RT for PDMO will be created on demand if requested for a test session*

Planned TIP Features

The list below shows the work plan in the TCCA working groups for features which have been requested to be included in a TIP. It is not guaranteed that the interoperability work for the features will be finalized in the order of the list/feature priority.

It is the decision of the individual manufacturer whether to implement a certain feature or sub-feature / certifiable item in its product or not. Please contact the individual manufacturers directly for information of the manufacturer's product feature implementation roadmap.

Reference: Feature Priority List_v200703

Item#	Priority	Item Name	Description
260	1	ISI Terminal Requirement – MMI Aspects	Requirement #6 #7 #8 #16
174	8	Transfer of HW and SW version	
251	11	ISI Phase 4 - V+D Aspects	disabling a visiting terminal disabled terminal migrating