

PART R71**HELP PHONES****CONTENTS**

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1. GENERAL

.1 This Part specifies the requirements for the supply of help telephones. It also specifies installation requirements for Contracts that include installation of the telephones. This Part must be read in conjunction with Part R60 "General Requirements for the Supply of ITS Equipment" and if installation forms part of this Contract, Part R61 "Installation of ITS Equipment".

.2 Documents referenced in this Part are listed below:

AS 1742.6	Manual of uniform traffic control devices - Tourist and services signs
AS 2700	Colour Standards for general purposes
AS CISPR 22	Information Technology Equipment -Radio Disturbance Characteristic –Limits and Methods of Measurement
AS 4117	Surge Protective Devices for Telecommunications Applications
AS 60529	Degrees of protection provided by enclosures (IP Code)
AS 60950	Safety of Information Technology Equipment
AS/ACIF S003	Customer Access Equipment for Connection to a Telecommunications Network
AS/ACIF S004	Voice Frequency Performance Requirements for Customer Equipment

.3 The following abbreviations are used in this Part:

3G	Third Generation cellular telecommunications network
ACMA	Australian Communications & Media Authority
cellular	Pertaining to a wireless telecommunications network comprising cells, such as GSM or 3G
DTMF	Dual-Tone Modulated Frequency
Full duplex	Ability to transmit and receive concurrently at full speed
GSM	Global System for Mobile Communications
NextG	Telstra's <i>Next G</i> cellular network
PABX	Private Automatic Branch Exchange
PSTN	Public Switched Telephone Network
TMC	Traffic Management Centre

Note: a reference in this Part to a clause in Part R60 "Supply of ITS Equipment" is indicated by "R60." preceding the clause number.

2. QUALITY REQUIREMENTS

- .1 The Contractor must prepare and implement a Quality Plan that includes or annexes the following documentation:
 - (a) Acceptance Test Plans (refer Clause R60.13 "Testing and Acceptance"), which provides full details of tests necessary;
 - (b) Routine maintenance recommendations;
 - (c) Training Plan (refer Clause R60.15 "Training"); and
 - (d) Spare part requirements.
- .2 The Contractor must provide samples for acceptance in accordance with Clause R60.3 "Equipment Requirements". Equipment requiring connection to telephone lines must be ACMA approved and be labelled with the appropriate approval number.
- .3 If not submitted beforehand, the samples and documentation required by this Clause must be submitted at least 28 days prior to the commencement of site work or placing an order for Equipment.
- .4 Provision of the documentation and samples listed in this Clause shall constitute a **HOLD POINT**.
- .5 The Equipment must be manufactured under a quality system certified to AS 9001.

3. FUNCTIONAL REQUIREMENTS

- .1 The help telephones must be easy and intuitive to operate by any person in a roadside environment without any prior training. Calls must be able to be originated by either a motorist at the roadside help telephone, or the operator in the TMC.
- .2 The help telephone design must connect with the TMC using a full duplex, cellular modem, based on GSM or later generation of public cellular telephone network. Cellular telephones must connect with the network that provides the most reliable coverage at the site. Where more than one network can provide reliable coverage to the site, connection via Next-G must be the first preference. Each help telephone must be allocated a unique telephone number. The help telephone must be capable of autodialing a specified external line in accordance with the requirements of the TMC.

4. OPERATIONAL REQUIREMENTS

Availability

- .1 Equipment and systems must have an operational availability of not less than 99%.

Failure Modes

- .2 The Equipment and/or associated system(s) must:
 - (a) where specified, enter or display a default mode during power and/or communications failure;
 - (b) automatically shut down in a safe manner upon power and/or communications failure; and/or
 - (c) automatically restart in a safe manner upon restoration of power supply and/or communications.

Automatic Volume Control

- .3 Help telephones must have an automatic volume control so they can operate in a high vehicular noise environment, typically encountered on heavily trafficked freeways and major highways.

Incoming calls to the Help Phone

- .4 The help telephone must incorporate the ability to accept an incoming voice call from the TMC. Incoming calls must be established without the need to physically answer the call. Coupled with the incoming call must be a loud-sounding alarm that will alert the called party that an incoming call is current.

Outgoing calls from the Help Phone

- .5 The help telephones must have the facility to initiate the voice call to the TMC. The telephone number of the operator in the TMC must be able to be programmed in the telephone unit. The telephone must have the capacity to initiate an emergency help call using a single push button and must provide the caller with network progress tones so as to inform the caller of the progress of the call. The help call must automatically disconnect after the operator in the TMC releases the call.

Remote Configuration and Programming

- .6 The help phone must be capable of secure, remote configuration and programming by the TMC. Secure access to the help phone must be via a secure PIN entry.
- .7 A range of user configuration and programming commands will include, but not limited to:
 - (a) reading and writing calling numbers
 - (b) asset ID number
 - (c) hardware test including help phone status, battery status, signal strength etc.
 - (d) help phone reset
 - (e) auto test call facility

Health Monitoring and Reporting

- .8 The help phone must be capable of continuous internal health monitoring and fault reporting including damage reporting resulting from wanton damage, vandalism or destruction.
- .9 The help telephones must be capable of reporting acts, intermittent, abnormal and permanent damage arising from acts of vandalism or similar.

Diagnostic features

- .10 The help phone must feature diagnostic routines for the purpose of service restoration. Diagnostic routines must be accessible to the representative through on-site and remote access.

Compliance Requirements

- .11 The help telephone installation must comply with the following:
 - (a) AS/ACIF S002;
 - (b) AS/ACIF S003;
 - (c) AS/ACIF S004;
 - (d) AS CISPR 22;
 - (e) AS 4117; and
 - (f) AS 60950.

5. MECHANICAL AND PHYSICAL REQUIREMENTS

- .1 All control equipment must be installed in a cast or extruded aluminium housing. The design of the enclosure must enable the Equipment installed within the enclosure to operate in the environmental conditions specified in Clause 260.4 "Environmental Requirements". A handset symbol in accordance with AS 1742.6 and DPTI Operational Instruction 6.9 "Help " must be provided on the outer-most vertical faces of the enclosure.
- .2 All doors and openings in the help telephone must be provided with a durable and resilient weatherproof seal. When installed, in normal service, the help telephone must provide a degree of protection of at least IP55 in accordance with AS 60529. The enclosure must be vermin proof, including termites, ants, bees and mice.
- .3 A call initiation button must be mounted on the front panel and must be easily accessible and identified by the user.
- .4 The surface finish must be:

Exterior colour:	Mid Blue B15 as defined in AS 2700.
Interior colour (where viewed by public):	Mid Blue B15 as defined in AS 2700.

6. ELECTRICAL REQUIREMENTS

- .5 The help telephone must be capable of operating on a self contained solar power supply unit. Potential and actual problems with the help phone and accessories (such as speaker, microphone and solar power supply) must be detectable by remote monitoring.
- .6 A solar panel (mounted 3m above in areas accessible to the public), orientated for maximum average power output must be provided. The internal batteries must be fully sealed, rechargeable, heat tolerant

and maintenance free with a minimum lifetime of 5 years in the installed environment. They must operate the connected load at the site continuously for 72 hours without recharge and have a continuous charge controller.

6. **INSTALLATION**

- .1 The following requirements are in addition to Part R61 "ITS Equipment Installation".
- .2 The help telephones and associated advisory signs must be installed in accordance with DPTI Operational Instruction 6.9 "Help Phones". Help telephones must be installed at the locations shown on the design documentation, using a vandal resistant, non frangible mount. The Help phone may be pedestal mounted, wall mounted or barrier mounted.
- .3 A weather-proof, aluminium label detailing the caller instructions for using the help telephone must be provided on the Front Panel. The label must display black text (minimum size 4mm) in a sans-serif font. The label must be fixed by an appropriate grade of vandal-resistant adhesive.

7. **HOLD POINTS**

- .1 The following is a summary of Hold Points, referenced in this Part:

CLAUSE REF.	HOLD POINT	RESPONSE TIME
2	Quality Plan	7 days
2	Equipment Sample, including Austel Approval No.	7 days
R60.15.2	Training Plan	7 days

8. **VERIFICATION REQUIREMENTS AND RECORDS**

- .1 The Contractor must supply the following records:

CLAUSE REF.	SUBJECT	RECORD TO BE PROVIDED
R60.11	Manuals	Operation and maintenance manual(s)
R60.12	Warranty	Manufacturer's Warranty
R60.13	Testing and commissioning	Factory Acceptance Test (FAT) Records
R60.14	System documentation	"As Built" documentation
R61.6	Testing and commissioning (if installation forms part of this Contract)	Site Acceptance Test (SAT) and System Integration Acceptance Test (SIAT) Records - refer Part R61 "Installation of ITS Equipment".