1. INFORMATION ON TWO WAY RADIO DESIGNATION

1.1 A "two-way radio" is simply a radio that can both transmit and receive signals (a transceiver). In broader terms, most of voice wireless communications systems, including cellular system, fall into two-way radio definition. "Two-way radio" refers to radio system mainly used for group call communication.

1.2 This "two-way radio" system is also known as Professional Mobile Radio (PMR), Land Mobile Radio (LMR), Private Mobile Radio (PMR), Public Access Mobile Radio (PAMR) system. Portable two-way radios are often called walkie-talkies or handietalkies and are also available in mobile and base configurations as well as utilizing radio network infrastructure.

1.3 These devices are procured and used by security forces personnel such as the military, police, traffic officers and others like the emergency medical services, fire brigade, utility companies, municipalities, transportation etc.

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1.5 **Typical Network Component:** In a typical configuration, a wide area radio network consists of 3 major components:

(a) **Based Station - This is** a network component that provides Radio Frequency (RF) coverage in a radio network. In typical configuration, a base station can consist of RF Repeater(s), Controller(s), antenna distribution system (i.e. duplexer, combiner, etc.) and Power Supply.

(b) **Switching System -** This is a network component that manages the entire network. The switching system, for example, manages the traffic in and out and route the communication to and from base stations. Switching system is the brain of the network without which the network will not be able to handle wide area network calls.

(c) **Radio Terminal - This is** a device for the user to communicate and interface to the network. For end-users, they will mostly see these devices more often than the radio infrastructure itself. Thus, the ergonomics and performance of radio terminal (i.e. size, weight, battery life, user interface and ease of use) plays an important role for end-user's acceptance of radio system. In general, radio terminal can be classified into:

• Portable radio - this is the device that users can carry while on the move.

• Mobile radio - this is the device that is permanently installed in a vehicle/motorbike.

• Fixed station radio - this device is usually installed in a fixed location such as a branch office or a field post. Typically, a fixed-

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station radio is a mobile radio with a power supply, external microphone or speaker and better antenna system (such as directional antenna).

Table 1 Classify the devices that institute Radio Terminal as follows:
Table 1: Types of Radios

Radio Terminal	Description
Portable radio	Device carried on the persob (Handheld)
Mobile radio	Device installed in a vehicle/motorbike
Repeater	Device installed in a fixed location or a field post

1.6   Table 2 provides the stipulated minimum threshold for local content and production for portable radio, mobile radio, repeater and associated equipment. To ensure that the minimum local content designated is discharged on manufacturing activities, the components and activities in the manufacture of portable radio, mobile radio, repeater and associated equipment are further designated and must also be included in bid invitations:

Table 2: Local Content Designated on a Fully-Built Unit and Components and Activities against which the overall Local Content must be discharged, per device constituting radio terminals

Radio Terminal	Components and manufacturing processes against which the overall local content must be discharged	
	Components and manufacturing processes	**% local content from 04/**
Portable Radio	Controls	100%
	Display	20%
	Interface	40%
	Data Module	50%
	Radio Module	50%
	RF Amplifier	100%
	Antenna	100%
	Battery	30%
	Charger	50%
	Assembly and testing of fully built unit	100%
	Position Module	30%
	Power Supply	70%
	Connectors	25%
	Enclosure	90%
	Embedded Custom Software	90%
	Software Libraries	-
	Total Minimum local content (per unit)	**60%**

Radio Terminal	Components and manufacturing processes against which the overall local content must be discharged	
	Components and manufacturing processes	% local content from 04/ 2017
Mobile Radio	Controls	100%
	Display	20%
	Interface	40%
	Data Module	70%
	Radio Module	70%
	RF Amplifier	70%
	Antenna	100%
	Battery	25%
	Charger	70%
	Assembly and testing of fully built unit	100%
	Position Module	50%
	Power Supply	50%
	Connectors	25%
	Enclosure	90%
	Embedded Custom Software	90%
	Software Libraries	-
	Total Minimum local content (per unit)	**60%**

Radio Terminal	Components and manufacturing processes against which the overall local content must be discharged	
	Components and manufacturing processes	% local content from 04/ 2017
Repeater	Controls	100%
	Display	20%
	Interface	40%
	Data Module	70%
	Radio Module	70%
	RF Amplifier	70%
	Antenna	100%
	Battery	25%
	Charger	30%
	Assembly and testing of fully built unit	100%
	Position Module	30%
	Power Supply	70%
	Connectors	25%
	Enclosures	90%
	Embedded Custom Software	90%
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1.7 The following primary input materials used in the manufacture of "two-way radio terminals" and associated equipment are deemed as local in this designation:
- Integrated Circuits (i.e. Silicon chip);
- Resistors;
- Transistors;
- Capacitors;
- Vacuum Tube;
- Software Libraries.

1.8 The designated local content thresholds (on the components and on the overall) apply to new purchases; refurbishments, replacements and general overhauls.

1.9 For further information, bidders and procuring State Organs may contact the Director Electrotechnical Unit within **the dtic** at telephone 012 394 3659/3622 or email localcontent@thedtic.gov.za

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