FIGURE 9/Q.1152 (sheet 2 of 2)

Interworking of Signalling System No. 5 to INMARSAT aeronautical system

FIGURE 9/Q.1152 (sheet 1 of 2)

Interworking of Signalling System No. 5 to INMARSAT aeronautical system

Figure 9/Q.1152 contains the procedures for interworking of Signalling System No. 5 INMARSAT aeronautical signalling system.

The following details should be noted:

11.1 The KP2 or KP1 signal is received from the MSSC, depending on whether the country code is to be expected along with the called party address or not, respectively.

11.2The "busy-flash" signal is sent to the ISC if the call cannot be completed for any of the following reasons:

- called AES subscriber is busy;

- no satellite channel is available;

- the continuity check is unsuccessful.

The special information tone is sent back to the ISC, if the call is unsuccessful for any other reasons.

11.3Answer and clearback signals received from the AES are conveyed through to the terrestrial network as soon as they are received, and there is no timeout supervision required.

wAddendumw - A recent change in the INMARSAT signalling system definition allows cause information to be carried in the channel release signal, thereby making it unnecessary to send the call attempt result signal for unsuccessful calls. The interworking procedures in this Recommendation do not reflect this change.

FIGURE 8/Q.1152 (sheet 3 of 3)

Interworking of INMARSAT aeronautical system to Signalling System No. 5

FIGURE 8/Q.1152 (sheet 2 of 3)

Interworking of INMARSAT aeronautical system to Signalling System No. 5

FIGURE 8/Q.1152 (sheet 1 of 3)

Interworking of INMARSAT aeronautical system to Signalling System No. 5

FIGURE 7/Q.1152 (sheet 2 of 2)

Interworking of Signalling System No. 7 TUP to INMARSAT aeronautical system

FIGURE 7/Q.1152 (sheet 1 of 2)

Interworking of Signalling System No. 7 TUP to INMARSAT aeronautical system

t2 = 1 to 2 minutes (as per Recommendation Q.118, § 4.3.2)

Figure 7/Q.1152 contains the procedures for interworking of Signalling System No. 7 (TUP) to INMARSAT aeronautical signalling system.

The following details should be noted:

9.1Calling party category information indicating the nature and priority of the call, is transferred through to the aeronautical system. The operator language indicator is interpreted and used by the MSSC.

9.2The entire called party address, except the country code digits, are transferred through to the aeronautical system. The outgoing aeronautical logic process determines the validity of the addressed AES, and returns an unsucessful call indication if necessary.

9.3The call may also be aborted if:

- no satellite voice channels are available;

- the addressed AES subscriber is busy;

- the continuity check is unsuccessful.

9.4The MSSC returns audible ring tone, as per provisions in Recommendation Q.35, to the terrestrial network. The tone is applied on receipt of the address complete message from the AES, and removed upon receipt of the connect message.

10Interworking of incoming INMARSAT aeronautical to Signalling System No. 5

Figure 8/Q.1152 contains the procedures for interworking of INMARSAT aeronautical signalling system to Signalling System No. 5.

10.1The outgoing Signalling System No. 5 procedure is activated after receipt of the calling party category information, in the access request message from the AES.

10.2Either KP2 or KP1 signal is sent by the MSSC, depending on whether the country code is to be outpulsed or not, respectively.

10.3The artificial "send-finished" signal, received from the outgoing Signalling System No. 5 procedure is interpreted as an address complete condition to convey back to the AES.

10.4The "busy-flash" signal (unsuccessful call) received from the terrestrial network is transferred to the AES by means of the call attempt result message.

10.5Answer and clearback timeout supervision is done by the MSSC, with timers t1 and t2, respectively. The values of the timers are as follows:

t1 = 2 to 4 minutes (as per Recommendation Q.118, § 4.3.1)

FIGURE 6/Q.1152 (sheet 3 of 3)

Interworking of INMARSAT aeronautical system to Signalling System No. 7 TUP

FIGURE 6/Q.1152 (sheet 2 of 3)

Interworking of INMARSAT aeronautical system to Signalling System No. 7 TUP

FIGURE 6/Q.1152 (sheet 1 of 3)

Interworking of INMARSAT aeronautical system to Signalling System No. 7 TUP

FIGURE 5/Q.1152 (sheet 2 of 2)

Interworking of Signalling System R2 to INMARSAT aeronautical system

FIGURE 5/Q.1152 (sheet 1 of 2)

Interworking of Signalling System R2 to INMARSAT aeronautical system

FIGURE 4/Q.1152 (sheet 3 of 3)

Interworking of INMARSAT aeronautical system to Signalling System R2

FIGURE 4/Q.1152 (sheet 2 of 3)

Interworking of INMARSAT aeronautical system to Signalling System R2

FIGURE 4/Q.1152 (sheet 1 of 3)

Interworking of INMARSAT aeronautical system to Signalling System R2

t1 = 2 to 4 minutes (as per Recommendation Q.118, § 4.3.1)

t2 = 1 to 2 minutes (as per Recommendation Q.118, § 4.3.2)

6.1Figure 4/Q.1152 contains the procedures for interworking of INMARSAT aeronautical signalling system to Signalling System R2.

6.2The interworking procedure supervises the answer time and the clearback time, with timers t1 and t2 respectively. The values of the timers are as follows:

t1 = 2 to 4 minutes, as per Recommendation Q.118, § 4.3.1

t2 = 1 to 2 minutes, as per Recommendation Q.118, § 4.3.2

7Interworking of Signalling System R2 to outgoing INMARSAT aeronautical

7.1Figure 5/Q.1152 contains the procedures for interworking of Signalling System R2 to INMARSAT aeronautical signalling system.

7.2The ringing tone towards the calling subscriber of the fixed network is initiated by the interworking procedure. The tone should have characteristics in accordance with Recommendation Q.35.

8Interworking of incoming INMARSAT aeronautical to Signalling System No. 7 (TUP)

Figure 6/Q.1152 contains the procedures for interworking of INMARSAT aeronautical signalling system to Signalling System No. 7 (TUP).

The following details should be noted:

8.1The outgoing Signalling System No. 7 (TUP) is activated only after receipt of calling party category information.

8.2Signals to inform whether continuity checking is required on the terrestrial link, whether an incoming half-echo suppressor should be inserted, and whether country code digits will be sent along with the called party address, are sent to the ISC. The ISC is also informed that continuity has been proven on the satellite link.

8.3All address-complete backward signals are transferred through to the outgoing aeronautical procedure. The charge related information is interpreted and used by the MSSC for billing purposes, and a simple address complete message is sent to the AES.

8.4All unsuccessful call indications received from the ISC are relayed to the INMARSAT system, by means of the call attempt result message with the cause value set appropriately.

8.5Charge information contained in the answer message is again used by the MSSC for billing purposes.

8.6Answer and clearback supervision is done by the MSSC with timers t1 and t2 respectively. The values of the timers

FIGURE 3/Q.1152 (sheet 2 of 2)

Interworking of INMARSAT aeronautical system with itself

FIGURE 3/Q.1152 (sheet 1 of 2)

Interworking of INMARSAT aeronautical system with itself

Figure 3/Q.1152 contains the procedures for interworking between the incoming and outgoing procedures of the INMARSAT aeronautical system. These procedures may also apply for interworking between INMARSAT aeronautical and the Standard-A and Standard-B systems.

The following details should be noted:

5.1The outgoing INMARSAT aeronautical logic process is activated after receipt of the calling party category information, indicating whether the call is ordinary or priority.

5.2The called party address, excluding the INMARSAT country code, is transferred to the outgoing process. The process returns to idle on receipt of any unsuccessful BITE or the clear forward FITE.

5.3The call is cleared as normal, on either clearforward FITE or clearback BITE signals.

5.4The interworking procedure supervises the answer time (timer t1). The value of the timer is as follows:

t1 = 2 to 4 minutes, as per Recommendation Q.118, § 4.3.1.

FIGURE 2/Q.1152 (sheet 2 of 2)

Logic procedures for outgoing INMARSAT aeronautical signalling (ground-to-air calls)

wNotew - Number valid ? means is the AES in the region of the calling GES; i.e. logged on the same satellite.

FIGURE 2/Q.1152 (sheet 1 of 2)

Logic procedures for outgoing INMARSAT aeronautical signalling (ground-to-air calls)

Figure 2/Q.1152 contains the procedures for the outgoing INMARSAT aeronautical signalling system.

This description only includes the aspects of the INMARSAT aeronautical system which have to be implemented for interworking purposes. Internal procedures, such as those required for setting up and clearing satellite channels are not shown. This also applies to pre-emption procedures for assigning channels to distress calls.

The following details should be noted:

4.1The outgoing INMARSAT procedure receives the calling party indicator, and address digits from the interworking process. It determines whether the addressed AES is an authorized user and if it is logged on in the same satellite region. BITE 15 is returned to the terrestrial network if the dialled AES number is invalid.

4.2The MSSC attempts to assign a satellite channel to the call, and tests for continuity of the channel. National network congestion (BITE 12) signal is returned if no channel is available. Appropriate signals are returned to signify continuity failure and AES busy conditions.

4.3Answer signal is returned when the connect message is received from the AES.

4.4The call is cleared down in the usual manner, on receipt of either clear forward from the interworking process, or channel release from the AES.