



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**Q.473**

**SPECIFICATIONS OF SIGNALLING SYSTEM R2  
SIGNALLING PROCEDURES**

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**USE OF END-OF-PULSING SIGNAL I-15 IN  
INTERNATIONAL WORKING**

**ITU-T Recommendation Q.473**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation Q.473 was published in Fascicle VI.4 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

### **5.3.4 USE OF END-OF-PULSING SIGNAL I-15 IN INTERNATIONAL WORKING**

In international working, the end-of-pulsing signal I-15 is used in accordance with Recommendation Q.468. Signal I-15 (end-of-pulsing) is sent immediately after the last digit.

In national working, signal I-15 may be used too.

In semi-automatic operation, calls to operators' positions are always terminated by transmission of signal I-15. This signal can only be interpreted if the incoming R2 register is equipped for reception of 6 forward frequencies. However, when an incoming R2 register is equipped for reception of only 5 forward signalling frequencies no provision can be made for recognition of signal I-15. Such an incoming R2 register will then act as though signal I-15 had not been sent. Consequently the next interregister signal is only one of the signals A-3, A-4 or A-6 sent in pulse form.

#### **5.3.4.1 *Procedures to be followed after receipt of end-of-pulsing signal I-15 by the last incoming R2 register (situated in a transit exchange or in the exchange to which the called subscriber is connected)***

Incoming R2 registers equipped for the reception of all 6 forward signalling frequencies can acknowledge receipt of the end-of-pulsing signal I-15 by sending an appropriate backward signal to complete the compelled signalling cycle. Interregister signalling is terminated according to the procedures specified in Recommendations Q.471 or Q.472 when criterion *a*) (analysis) is applied.

In particular, if the last incoming R2 register acknowledges signal I-15 with signal A-1 the outgoing international R2 register will not send any signal and the incoming R2 register can only send one of signals A-3, A-4, A-6 or A-15 in pulse form.

Since there is no compulsion to equip incoming R2 registers in national exchanges with receivers for all 6 forward signalling frequencies, the signal I-15 sent by an outgoing international R2 register may not be recognized by the incoming R2 register. In such cases other criteria can be used to determine whether the number received by the incoming R2 register is complete.

When the incoming R2 register determines that the number received is complete using criteria other than *c*) (end-of-pulsing) it may be that the last digit of the subscriber number is acknowledged by signal A-3, A-4, A-6 or A-15. In this case interregister signalling is terminated without request for the signal I-15, in the normal way according to the procedures specified in Recommendations Q.471 or Q.472 (a compelled signalling cycle including signal I-15 is saved).

#### **5.3.4.2 *Procedure to be followed after receipt of signal I-15 by an incoming R2 register situated in a transit exchange***

Signal A-1, A-2, A-7, A-8, A-11 or A-12 may be sent in acknowledgement of signal I-15 (end-of-pulsing). However, at a transit exchange precautions are necessary to avoid acknowledgement of signal I-15 before the signalling system employed on the outgoing link has been identified. If signal A-1 is sent in acknowledgement of signal I-15 and if the outgoing link employs System R2, it is not then possible to send backward signal A-2, A-7, A-8, A-11 or A-12 after the end of the compelled signalling cycle because these signals cannot be sent in pulse form. Therefore end-to-end signalling to the next exchange is no longer possible.