INTERNATIONAL TELECOMMUNICATION UNION

ITU-T M.605

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

MAINTENANCE:

INTERNATIONAL TELEPHONE CIRCUITS

ROUTINE MAINTENANCE SCHEDULE FOR INTERNATIONAL PUBLIC TELEPHONY CIRCUITS

ITU-T Recommendation M.605

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation M.605 was published in Fascicle IV.1 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.

Recommendation M.605

ROUTINE MAINTENANCE SCHEDULE FOR INTERNATIONAL PUBLIC TELEPHONY CIRCUITS

1 General

A schedule for the routine maintenance of the international public telephony circuits linking any two countries (including speech circuits of Signalling System No. 6), is drawn up by bilateral agreement between the technical services[1)] of the countries concerned. The programming of the tests to be performed within the agreed scheduled time is the responsibility of each Administration. It is for the circuit control stations to ensure that the routines are carried out within the agreed schedule except as allowed for in § 2.5 below.

2 Routine measurements carried out manually: establishment of the schedule

2.1 *Schedule form*

Figure 1/M.605 shows the form to be used for establishing the routine schedule; an example of its use is given in Figure 2/M.605.

As far as possible the schedule is drawn up on the principle of batch measurements of circuits on a given route and shows the days and times during which the routine maintenance measurements should be carried out.

Each international test centre will require a set of eight forms to cover the four weeks of the *odd* and the four weeks of the *even* months, four weeks constituting a month for the purpose of the schedule.

Week 1 is the first whole week of a month beginning with a Monday. Week 4 may include days belonging to the following calendar month.

Odd months denotes January, March, May, etc., and *even* months February, April, etc.

The schedule form allows for simultaneous testing on two different routes where two test positions are provided for routine measurements. If more than two routine test positions are available, additional or suitably modified forms will be required.

2.2 *Arranging the schedule*

The periodicity for circuit routines should be determined from Recommendation M.610.

The total time required to routine test all the circuits on a route should be assessed. It will depend on:

a) the total number of circuits,

b) the type of measurements and tests to be made, and

c) the expected rate of completion of routines for each circuit.

The determination of item c) will require particular care. The duration of circuit routines may be expected to differ from one test centre to another due to the different facilities provided: for example, circuit test access arrangements, and the organization of the work. Thus, no guidance can be given to the expected rate of completion of routines.

To reduce the need to make frequent changes to the schedule, due allowance should be made for any planned increase of the number of circuits on a route.

The individual testing periods may be of 1, 2, 3 or 4 hours duration. Where the total routine time required for a route would make a single testing period impracticable, two or more testing periods should be allocated to the route, but these periods should be separated in time by at least 4 hours.

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1) In some Administrations this function may be delegated by the technical service, but in all cases the technical services are responsible for ensuring the satisfactory preparation and application of the schedule.

The days and times of the testing periods will be decided by a bilateral agreement between the two technical services concerned. To initiate the scheduling of routines for a route, the technical service to which the circuit control station is responsible should request copies of the current schedule form from the distant end technical service. The controlling end technical service should indicate on the forms the day(s) and time(s) it proposes, choosing any unallocated periods on the forms for this purpose. The forms should then be returned to the distant technical service and agreement sought on the proposals[2)].

It is intended that individual testing periods be allocated to the circuits of one control station only. However, subject to the bilateral agreement between the two technical services involved, individual testing periods may be used on a common basis for the circuits of both control stations.

2.3 *Use of echo canceller devices*

The number of echo cancellation stages and the echo path delay characteristics must be stated in order to program tests properly using the echo canceller test facility as specified in Recommendation O.22 [1]. These characteristics should be included in ATME No. 2 schedule forms when exchanged between Administrations. If ATME No. 2 is not used between Administrations, echo canceller delay information should be conveyed by other means, for example a telex message, or the manual routine testing schedule (Figure 1/M.605).

2.4 *Changes to the schedule*

As far as possible testing periods should be chosen so that new circuits can be incorporated without change to the schedule.

Modifications to the days and/or times of testing for existing circuits, or expansion of the schedule to accommodate additional circuits or new routes should be determined by the technical service to which the circuit control station is responsible, in agreement with the other interested technical service(s). If the technical service responsible for a circuit sub-control station considers it necessary to alter the routine maintenance schedule, it should propose changes and obtain the agreement of the technical service responsible for the control station. Any intended modifications or additions to the schedule should be entered in red on a current copy which should be forwarded to the distant technical service(s) concerned. Agreement or counterproposals can then be made by any suitable means[3)].

2.5 *Programming of routine measurements and tests*

It is the responsibility of each Administration to decide how the agreed scheduled test periods should be utilized for the effective completion of routines on the circuits it controls.

This will involve determining the type of measurements and tests to be made on each circuit taking into account the recommended periodicities.

2.6 *Unscheduled periods*

Available periods in the schedule which are unallocated may be used for any purpose relating to circuit routines. Such use is on an *ad hoc* basis and each occasion must be agreed by the terminal control and sub-control stations concerned.

3 Circuit routines by automatic transmission measuring equipment ATME No. 2

3.1 *Schedule form*

For the orderly and effective use of ATME for circuit routines it is necessary to schedule its use.

For each distant end international centre an Administration will require the following information to enable it to make proposals for ATME routines on the circuits for which it has control responsibility:

a) type and quantity of responding facilities at distant end;

b) periods when distant end responding facilities are not scheduled for use;

c) periods to be avoided due to exchange peak traffic at distant end.

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2) In some Administrations this function may be delegated by the technical service, but in all cases the technical services are responsible for ensuring the satisfactory preparation and application of the schedule.

3) In some Administrations this function may be delegated by the technical service, but in all cases the technical services are responsible for ensuring the satisfactory preparation and application of the schedule.

This information should be applied by the distant end Administration on request and use of a standard form for this purpose is considered necessary. The form to be used is shown in Figure 3/M.605; an example of its use is given in Figure 4/M.605. Weeks 1, 2, 3 and 4 and *odd* and *even* months are as defined in § 2.1 above.

For ATME No. 2, three types of responding facilities are possible (see Recommendation O.22 [1]):

type a – for signalling tests and transmission measurements;

type b – for signalling tests only;

type c – for busy flash tests.

Two forms will be required for *each type a* and *b* responding equipment to cater for *odd* and *even* months. If the controlling end wishes to conduct routines at monthly or more frequent intervals then appropriate entries will need to be made on both *odd* and *even* month forms.

The type of ATME No. 2 responding equipment (*type a* or *b*) needs to be entered on the form. Each form should be given a unique reference number for administrative purposes.

Although two forms are required for each *type a* and *b* responding equipment, this does not imply that a particular responding equipment of the required type will be accessed. This will depend on local incoming arrangements.

Separate forms are *not* required for *type c* responding facilities. Where busy flash tests are to be made at the same time as transmission and/or signalling routines they should be considered as an extension of these routines and due allowance should be made for them when estimating the scheduled testing time required. An indication to show if *type c* responding facilities are or are not provided should be given on the schedule forms for *type a* and *b* responders.

The incoming access address for each type of responding facility is standard for each signalling system (see the Recommendation cited in [2]) and need not be entered on the schedule form.

3.2 *Arranging the schedule*

The technical service of an Administration wishing to commence routine testing using its ATME directing equipment, or to modify its routine programme, should request a copy of the current schedule of responding equipment availability for the distant international centre(s) of interest from the technical service concerned. This schedule will be entered on the form given in Figure 3/M.605.

The technical service at the controlling (i.e., directing equipment) end should indicate the test period(s) it proposes on the schedule and return it to the distant end for agreement.

The technical service at the controlling end will need to take the following factors into consideration when determining the test periods required on a route:

a) circuit routine periodicity (from Recommendation M.610);

b) total routine time for all circuits on the route. This will depend on:

   i) total number of circuits;

   ii) type of tests and measurements;

   iii) routine time for circuits;

c) quantity of available responding equipments of required type at distant end (This is required when it is intended to test with more than one directing equipment simultaneously to the same distant testing centre.);

d) quantity of directing equipments to be used;

e) that test periods should be multiples of 1 hour;

f) that busy traffic periods should be avoided.

To reduce the need to make frequent changes to the schedule, due allowance should be made for any planned increase of the number of circuits on a route.

3.3 *Utilization of scheduled test periods*

It is the responsibility of each Administration to decide how the agreed scheduled test periods should be utilized for the effective completion of routines on the circuit it controls.

3.4 *Unscheduled periods*

Demand testing with ATME No. 2.

During the busy traffic period, when ATME No. 2 is not being used for routine testing, it can serve the need to permit single and rapid circuit testing on a demand basis for fault location and for testing of individual circuits following fault clearance, as well as for testing of new circuits to be added. For this reason responding equipments should be available at all times. Demand testing of large numbers of circuits for whatever purpose should be agreed between testing centres concerned.

3.5 *Utilization of directing equipment*

In addition to a current schedule of the availability of responding equipments at each of its international centres for the information of other Administrations, each Administration will have to maintain a schedule of the utilization of its own directing equipments. This is a matter for each Administration to arrange and does not require formulating by CCITT but the same type of form may also be used as indicated in Figure 5/M.605.

3.6 *Down time of ATME No. 2 equipment*

If ATME No. 2 equipment is to be out of service for a long period of time (several days), e.g. due to a fault condition or rearrangements in the international centre, so that automatic testing cannot be carried out or is heavily affected, the Administrations concerned should be advised accordingly.

International centre: _____ Month : odd/even[1]

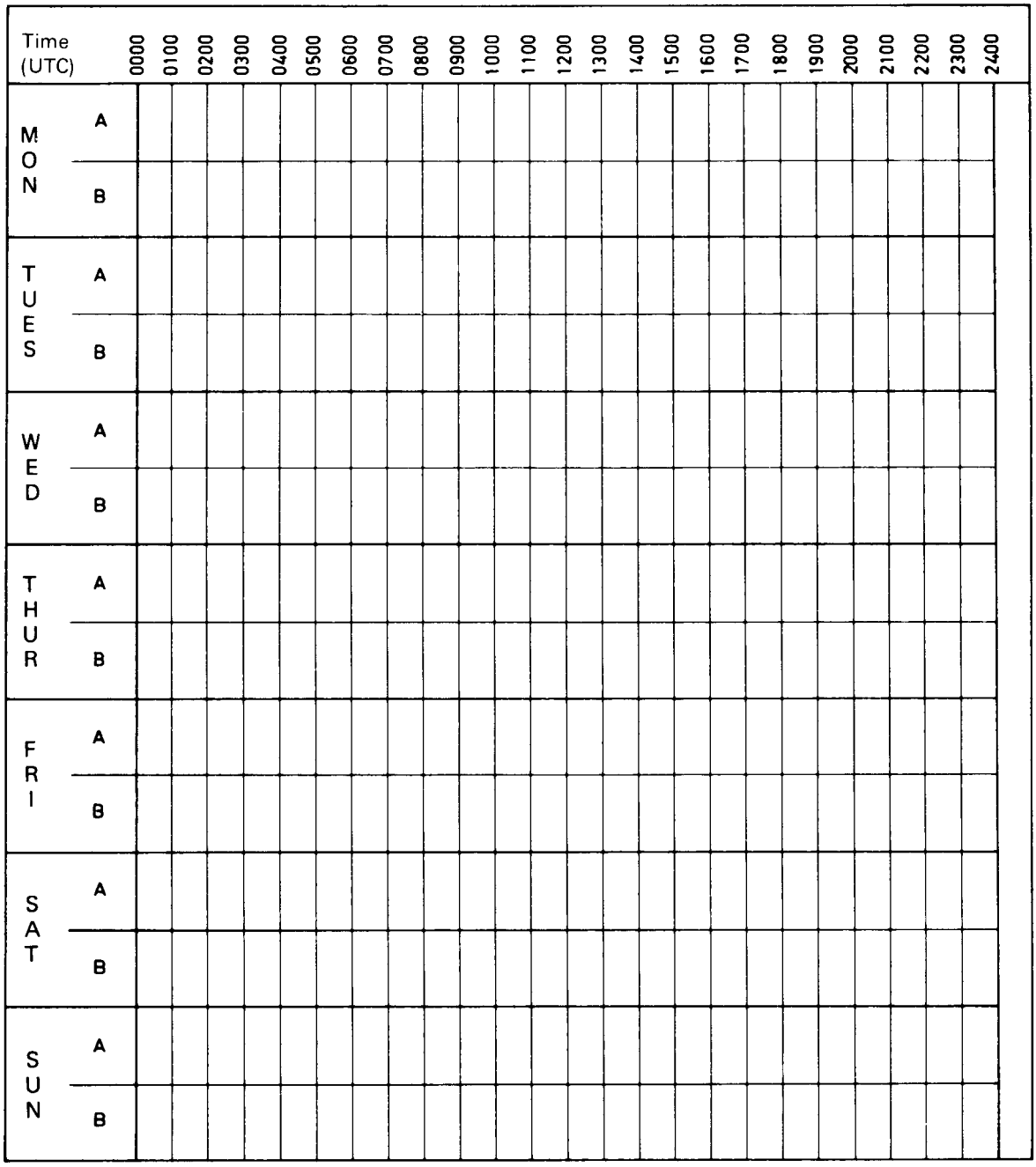
Telephone number: _____ Week : 1/2/3/4[1]
(for circuit routine
cooperation)

For one routine test position use row A.

For two routine test positions use rows A and B.

Number of echo cancellation stages .....

Echo path delay characteristic ..... ms



[1] Delete as applicable.

CCITT-36570

FIGURE 1/M.605

d01-sc

Manual routine testing schedule

International centre: London – Wood Street — Month: odd/even[1]

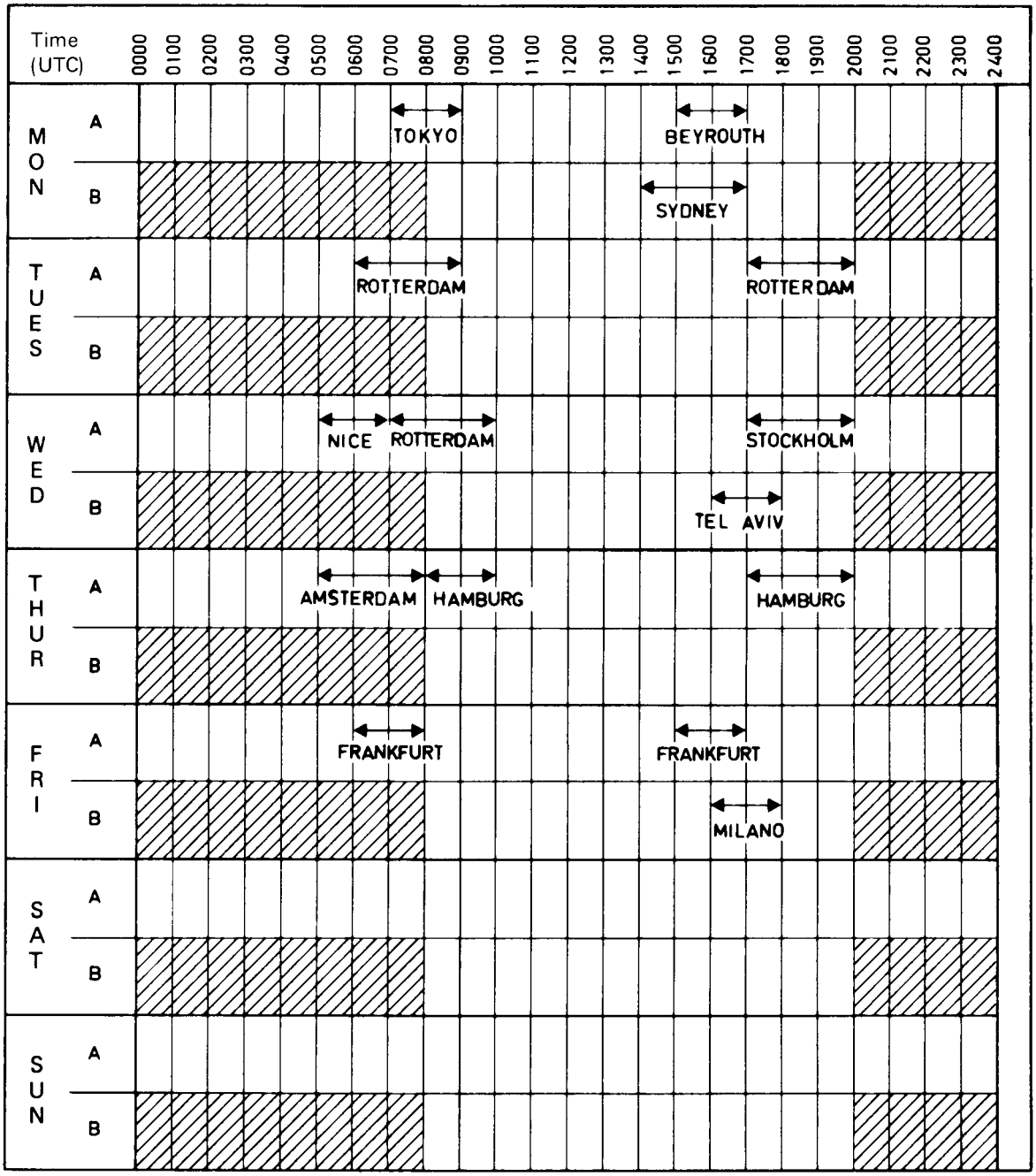
Telephone number: (for circuit routine cooperation) London 606 2064 — Week: 1/2/3/4[1]

For one routine test position use row A.

For two routine test positions use rows A and B.

Number of echo cancellation stages .....

Echo path delay characteristic ..... ms



[1] Delete as applicable.

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FIGURE 2/M.605

d02-sc

Manual routine testing schedule (hypothetical example)

International centre:

Month: odd/even[1]

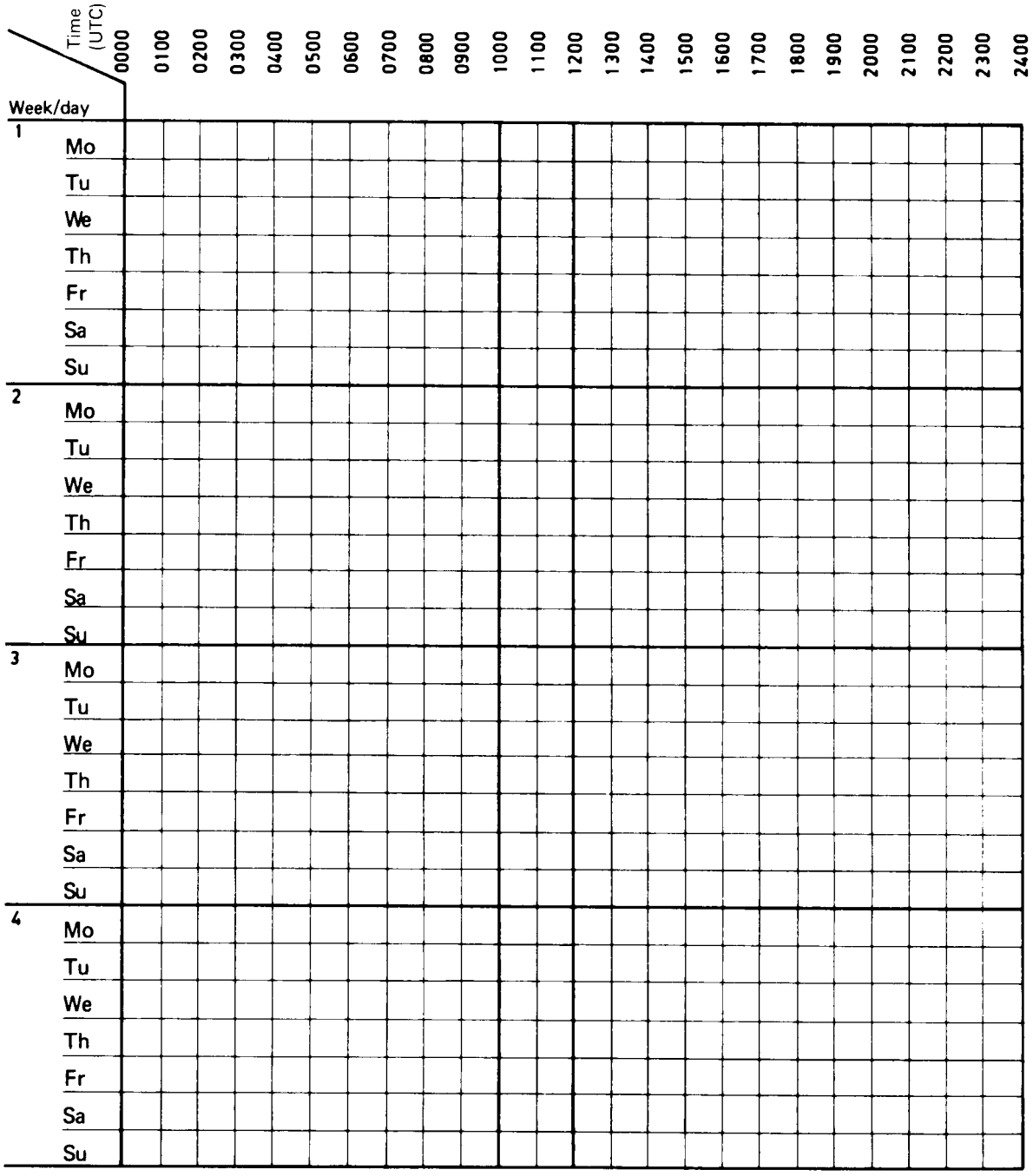
Reference number:

Responding equipment *type a/type b*[1]

Type c responding facility is/is not[1] available at this centre.

Number of echo cancellation stages .....

Echo path delay characteristic ..... ms



[1] Delete as applicable.

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d03-sc

FIGURE 3/M.605

ATME No. 2 availability schedule

International centre: Frankfurt/Main

Month: odd/even[1]

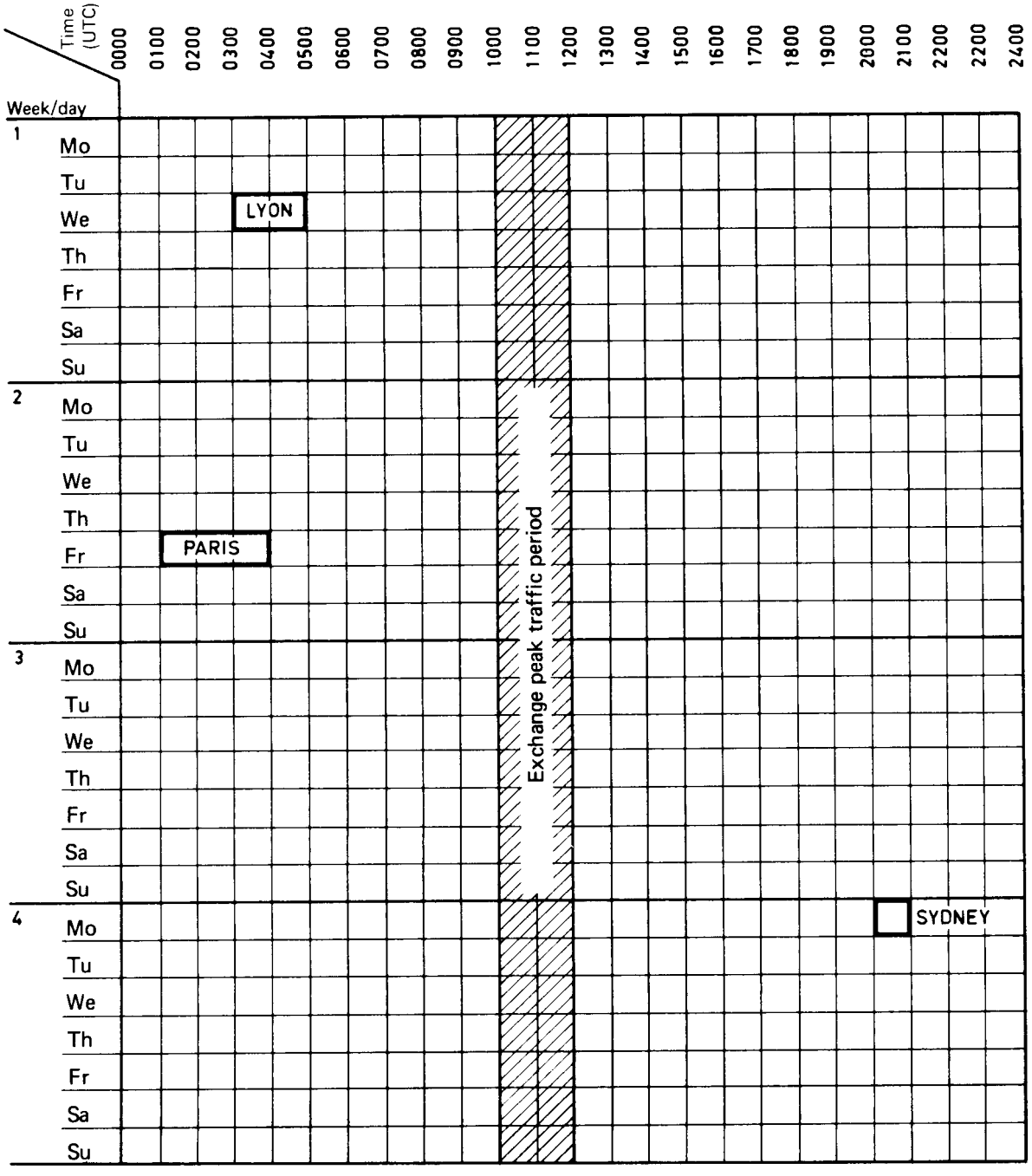
Reference number:

Responding equipment *type a/type b*[1]

Type c responding facility is/is not[1] available at the centre.

Number of echo cancellation stages .....

Echo path delay characteristic ..... ms



[1] Delete as applicable.

CCITT - 36602

d04-sc

FIGURE 4/M.605

ATME No. 2 availability schedule (hypothetical example for a responding equipment)

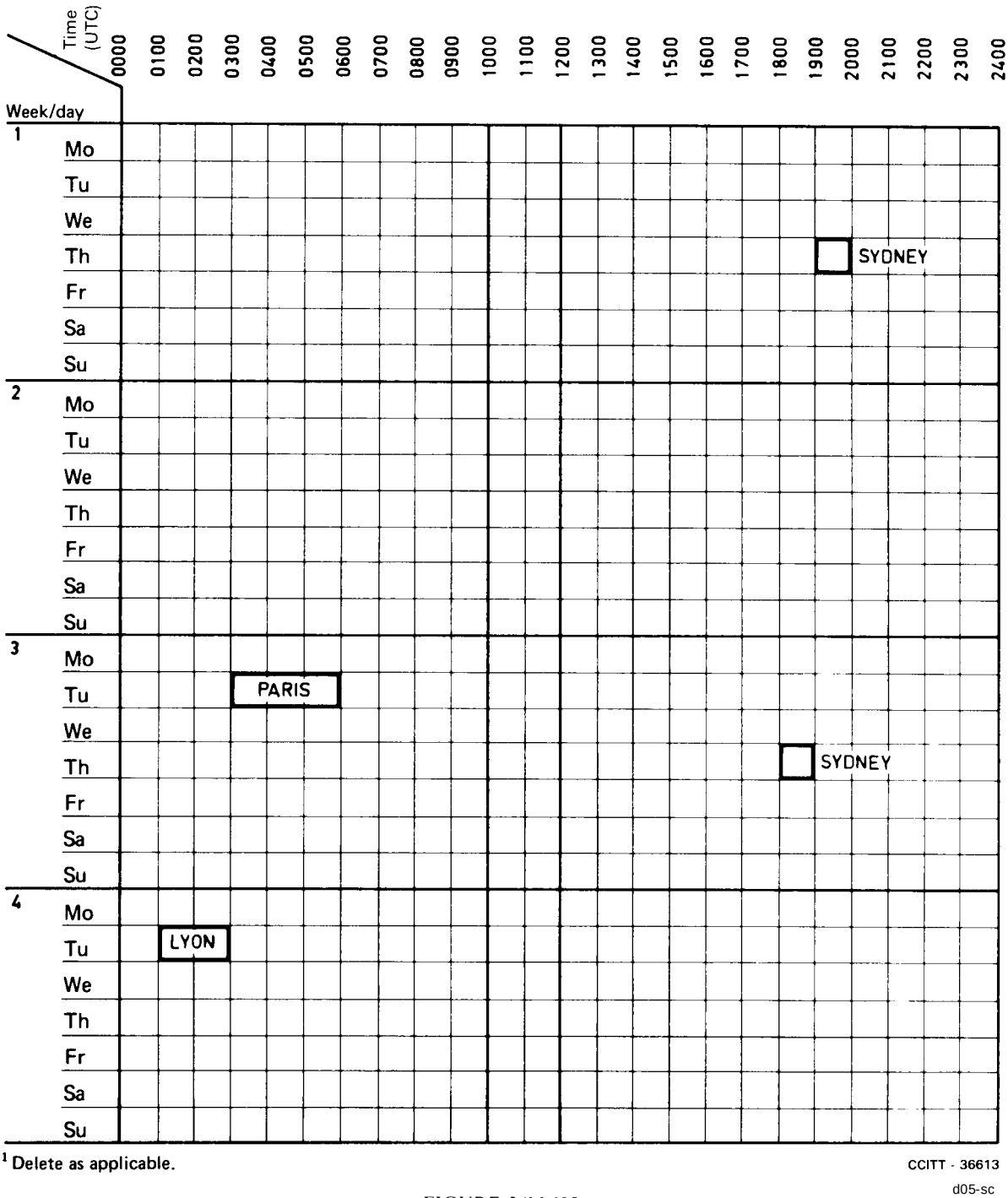


FIGURE 5/M.605

ATME No. 2 availability schedule (hypothetical example for a directing equipment)

References

[1] CCITT Recommendation *CCITT automatic transmission measuring and signalling testing equipment ATME No 2.*, Vol. IV, Rec. O.22.

[2] CCITT Recommendation *Maintenance access lines*, Vol. IV Rec. O.11.