

APPENDIX F

FUNCTION DESCRIPTIONS

In this appendix we give a brief description of 4 call functions, as they may be implemented in a general space divided telephone system (see figure 6.1). The four functions are: call initiation (sections $CI_a(i)$, $CI_b(-,i)$), digit reception (sections $DR_1(i)$, $DR_2(i)$), toning functions (sections $RB_1(i,j)$, $RB_2(i,j)$, $RT_1(i,j)$, $RT_2(i,j)$, $CT(i)$), and call ending (section $CE(i)$).

Call initiation

- (1) Verify that the calling subscriber is allowed to make calls (in the semi-permanent subscriber record).
- (2) Select, occupy and link a free transient call record (t.c.r., see section 6.5.1) to the subscriber record. In this t.c.r. all intermediary results of the call processing will be stored.
- (3) Determine subscriber specifics like signalling type, available facilities (abbreviated dialling), and indicate these in the t.c.r.
- (4) Select, occupy and link a free line-feed unit to the subscriber line.

Digit reception

- (1) Select, occupy and connect a free digit receiver of the appropriate type to the subscriber's line-feed unit.
- (2) Initialize that digit receiver (process).
- (3) Await the completion of digit reception, disconnect and release the receiver and the route from the line-feed unit to that circuit.
- (4) The digit receiver is assumed to:
 - generate the dial tone;
 - detect the initiation of subscriber dialling;
 - remove dial tone in response to the latter event;
 - receive and interpret the routing information, that is:
 - distinguish between successive digits;
 - detect invalid or superfluous digits;
 - store received digits in the t.c.r.;
 - detect the completion of subscriber dialling, and
 - observe time limits (inter-digit pauses, response times, pulse lengths).

Toning functions

- (1) Select, occupy and connect a free tone-circuit of the appropriate type.
- (2) Initialize that circuit (or the corresponding peripheral process).
- (3) Await the completion of the toning function, disconnect and release the tone circuit and route from that circuit to the line-feed unit.
(N.B.: In some cases the tones may be generated within the line-feed unit. In these cases the references to 'circuits' can be ignored.)

(4) The toning circuit (or process) is assumed to:

- generate the appropriate tone (ring-tone, ring-back tone, congestion-tone);
- await the occurrence of a termination condition (on-hook, call answering, time-out, etc.), and
- observe time limits (response times).

Call ending

Clear all fields in the t.c.r. Return the t.c.r. to the common pool of free t.c.r.'s. Restore all communal variables to their initial value.