

Source: TSG CN SS ad hoc chairman
Subject: Some Thoughts on Multicall

Provision of Multicall

The stage 1 specification requires introduction of subscriber controlled procedures for managing the status of multicall in the network. Regardless whether this is required for Release 99 or later Releases, it would be recommendable to apply for the provision of the service also supplementary service mechanisms.

The reason is, parameters like SS-code and SS-Status are well introduced in the SS operations and could be reused for this purposes. Furthermore the modelling of SS-status (state transitions) give a clear view of the status of the service in the network to involved network entities, including the mobile station (for display to the subscriber). In general, reusing of supplementary service procedures would be a simple but flexible mechanism to fulfil the stage 1 requirements, e.g. the service can be activated/deactivated and registered/erased (setting of the maximum number of ongoing calls) and interrogated.

Multicall Interactions with Call Waiting:

Current situation (Call Waiting with one bearer):

If an incoming call arrives for a subscriber who has an active ongoing call the network checks, whether Call Waiting is active and operative for the basic service of the ongoing call. There is no check regarding the type of the incoming call. The call is

Interactions of Call Waiting with Multicall:

Call Waiting can be activated on a per basic service basis, e.g. it can be active for speech but not for asynchronous circuit switched data. If there are several types of ongoing calls, which of the ongoing calls is evaluated for Call Waiting purposes?

With the limitation of Multicall to have only one speech bearer, the type of the incoming call needs to be checked in order to decide whether Multicall or Call waiting shall be invoked depending on several other conditions. This will result in a decision matrix to be kept in the network which will handle the following inputs:

- Type of incoming Call
- Number of ongoing calls
- Number of ongoing speech calls
- Types of other ongoing calls (depending on the decision which ongoing call is used to determine the Call Waiting status)
- Call Waiting activation status
- Number of waiting calls
- Status of Multicall (e.g. Number of maximum calls allowed)

It is not known clear so far how the network can consider the capabilities of the mobile station in this decision matrix. Is there an indication in the MS classmark, whether Multicall is supported? Furthermore the classmark could contain further information, e.g. maximum number of supported calls, number of supported telephony calls, maximum number of waiting calls. This would optimize the handling for the access signalling and would be more future proof.

The output of the decision matrix may contain 3 possible values:

- Subscriber is NDUB
- Incoming call shall be offered as a normal call, including Multicall
- Incoming call shall be offered as Waiting Call.

The decision matrix could be simplified by splitting the Multicall related checks from the Call Waiting related checks. This is something which needs to be defined in the Multicall or Call Waiting stage 2 specification respectively.

