No. 12: Callback Solutions for GSM

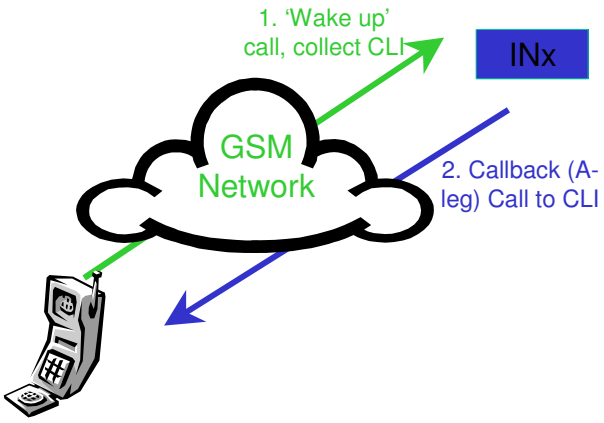
Using the GSM Callback feature available in the INx switching platform, operators can offer their customers significant cost savings. These cost savings are based firstly on the fact that calls from a fixed line to a GSM are often as much as 33% cheaper than calls from the GSM to a fixed phone and secondly on the avoidance of international roaming charges.

There are two methods of Callback supported by the INx: 1) Switch based callback and 2) SIM based callback

Switch based callback

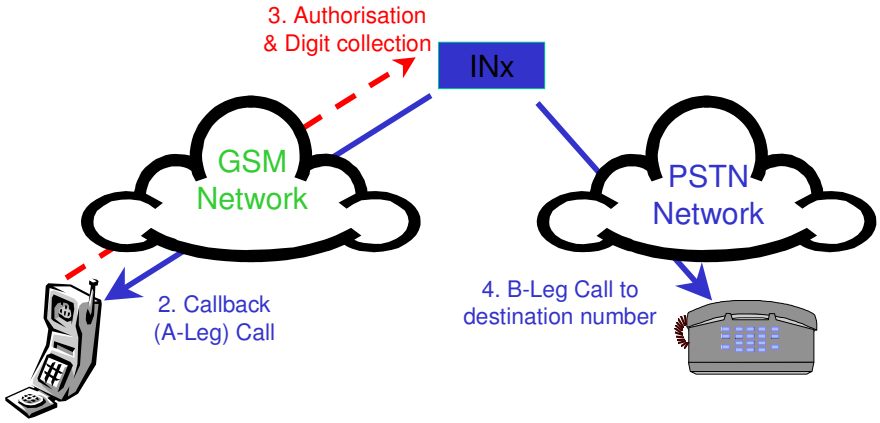
GSM Callback is instigated by a GSM user calling the pre-set number of the operator's INx. This number would be one of the handset's stored numbers. The INx on the operator's site receives this 'Wake up' call; on recognising the CLI the INx is aware that the call has been originated by a GSM telephone. After noting the CLI the call is rejected by the INx. As the call never connects there is no charge from the mobile network. The INx then automatically calls back the GSM phone using the stored CLI (see diagram of Stage 1). Thus the caller only incurs the fixed line to GSM charge, rather than the more expensive GSM to fixed phone charge.

Switch Based Callback –Stage 1



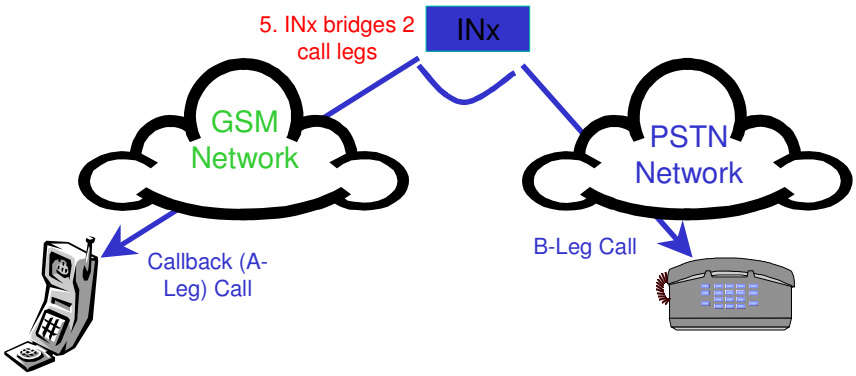
The INx will now wait for the user to enter the destination phone number they wish to be connected to. When this has been received the INx establishes the B-Leg of the call to that destination (see diagram of Stage 2).

Switch Based Callback –Stage 2



Finally the INx connects the A-Leg and B-Leg together (see diagram of Stage 3) and the call will proceed as normal. The whole process will make the call set up time longer, typically by around 10 seconds.
This callback facility can be combined with the Pre-Paid or Post-Paid services supported by the INx. If used with Pre-Paid cards billing will be transparent, based on CLI or the caller will be prompted for a PIN code which will be authorised before the destination number is entered.

Switch Based Callback –Stage 3



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Other Features

GSM Callback may be offered in four flavours by the INx:

1. GSM Dial tone
A simple service which works exactly as described in the diagrams above.

2. Personalised Speed Dialling
INx Callback has a very useful speed dialling feature that allows users to allocate frequently used numbers to one of the alphanumeric keys on their GSM. These numbers are then stored in the INx and the user is able to use this speed dial facility whenever they wish.

The INx prompts the user to confirm if they want to save the dialled number as a speed dial. If the user confirms that they want to do this, they are asked to specify which of the GSM keys it will be stored under. For example the user may wish to store their home telephone number under 'H'. Up to 100 numbers per user may be stored. These numbers are stored on the INx against a user's own reserved DDI number.

3. On-Line Directory
This is a directory similar to the stored numbers on the GSM handset itself. It can be of unlimited size and is accessed purely by voice prompts. It has the advantage that it does not need to be set up again every time the handset is changed.

4. Callback as part of other services
GSM Callback may be added as part of the many other services that the INx provides. For example it can be added to a subscriber's Pre-Paid account, to a Post-paid or Company account.

5. Multiple Language Support
For all of the above services multiple different languages may be used on the IVR system. For example, the user may choose the language at dial-in or the language may be associated automatically with a particular DDI (so that different languages can be offered to particular groups of customers).

SIM based callback

SIM based callback is aimed at mobile operators themselves. It allows them to avoid expensive roaming charges when their subscribers are away from the home network. This can be passed on in the form of lower call charges or can improve the margin that the operator makes.
WTL and a partner company have developed a technique which allows a Callback scenario to occur automatically. The call flow takes place as described above and shown in the diagrams for switch based Callback, however, there is no user intervention required. This is achieved by a combination of the Callback services of the INx and a specially programmed SIM in the handset.
The process works as follows:

1. User abroad makes call to a destination number in home country
2. SIM detects that this will be an international call and diverts call to a pre-programmed number of INx instead (INx may be located in remote or home country).
3. INx identifies user either a) by the DDI that has been called or b) by the CLI and then immediately rejects call (therefore no charge)
4. INx makes A-leg Callback call to handset
5. SIM recognises call from INx and answers automatically without ringing
6. Digits for original call to home country have been stored by SIM and are automatically passed to INx
7. INx makes B-leg call to destination
8. INx bridges two legs of the call and user continues as usual.
   The resultant call will be charged as two outbound calls from the INx. The A-leg will be subject to a termination charge by the remote GSM operator and the B-leg will have a per minute charge from the INx to the destination number. This will be substantially cheaper than the original call would have been as there would have been a per minute roaming charge. The call setup time will be increased by a few seconds as a result of using this service.

Other Benefits

As the call is now under the control of the INx it is the INx which creates the CDR. This means the operator has far more control than if it were a roaming call. The credit risk to the operator is greatly reduced (no need to wait for the CDRs to be delivered by the roaming operator).
The reduced credit risk means that it is now much more feasible to allow Pre-Paid customers to use a roaming service. The users balance will be decreased as soon as the call takes place rather than much later when the CDRs arrive from the roaming operator (these can often arrive more than one month after the call took place).