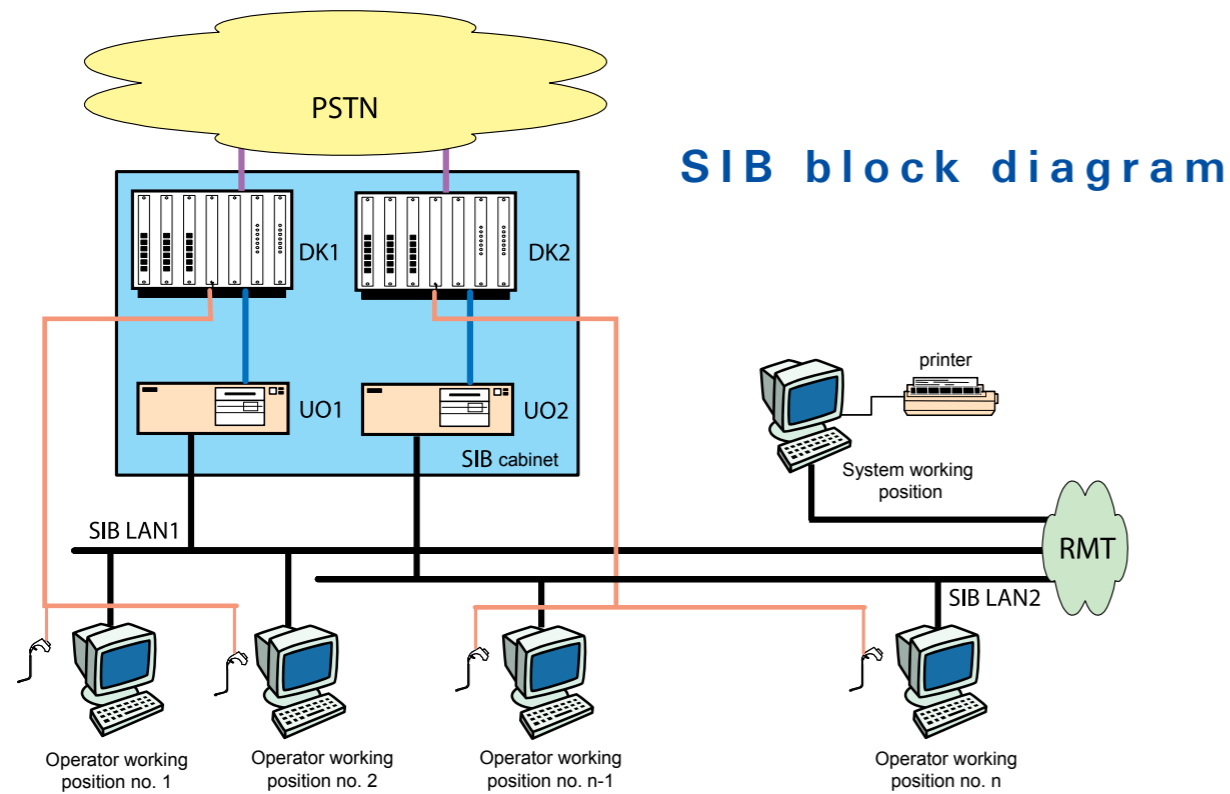


TECHNICAL DATA

PSTN interface	digital A interface	UO softver	Linux, application written in C++
LAN interface:	100 Base Tx Fast Ethernet IEEE 802.3u (100 Mb/s)	Voice machines	60 – 780
Signalization	D1/R2, IKM/R2, DTMF	Switching matrix	32 x 32 PCM MUX
Charging	impulses, set by SIB or not	BHCA	20.000
Trunk channels	60 – 780	Power supply	48 V dc for central part (UO, D K) 220 V ac for working positions
Operator working positions	1 – 60	Consumption	600 W for central part
System working position	1	Mechanical	19" rack
Operator working position softver	Windows 98, SQL client, application written in Visual Basic and C++	Options	Due to the nature of voice traffic, SIB is not fully engaged during the day, so it can be used for all kinds of automatic announcements – outbound call center



SIB WAKE UP SERVICE SYSTEM

- **Reliable wake up service system**
- **Stand alone, large capacity**



IRITEL
BEOGRAD

TELECOMMUNICATIONS AND ELECTRONICS CO.

Batajnički put 23, 11080 Belgrade, Serbia and Montenegro
 General Manager: (+381 11) 3073 515, Sales: (+381 11) 3073 555
 Marketing: (+381 11) 3073 544, Exchange: (+381 11) 3073 400, Fax: (+381 11) 3073 434
<http://www.iritel.com>, e-mail: info@iritel.com

IRITEL
BEOGRAD

Call Centers

Since 1990-ties Iritel a.d. produced systems for PSTN subscribers special services – call centers.

Several types of systems were produced, depending on technical and technological factors, user demands, etc. These systems are: NIPS (universal services), SIT (directory services), SIB (wake up service), and FPC (flexible universal system).

SIB basic features

- Wake up service (9811 in Serbian PSTN network)
- Enhanced reliability
- Automatic call reservation
- Call reservation through operator
- Automatic calling (wake up call)
- Subscriber charging partly at reservation and partly after succesful wake up call
- Modular number of channels
- Enough capacity for all Telekom Srbija subscribers (cca 3,000.000)

SIB structure

SIB basic features are:

- System is divided in two equal parts, for reliability reasons
- 30 to 780 voice channels
- 2 to 60 working positions
- Voice machine with 30 to 780 channels
- Signalization: D1/R2, IKM/R2
- BHCA = 20.000
- Maximum calls per day around 50.000

SIB is divided in:

- Telecommunication parts: DK1 and DK2
- Central processing units: UO1 and UO2
- Local access networks: SIB LAN1 and SIB LAN2
- Working positions with headsets
- System working position with printer

Digital switching blocks (DK1 and DK2) make and tear down connections with PSTN subscribers under the control of respectable central processing unit. Each of the DK blocks contains the following modules:

- RMM – working positions module
 - with up to 32 working positions
- DPB – trunk module:
 - 30 voice channels

- DK contains 1 to 13 DPB
- KM – switching module:
 - switching matrix with 32 x 32 PCM MUX
 - 1 to 4 voice machines with 120 independent voice channels each

Every of two **UO blocks** is an industrial high reliability PC which controls other blocks of the system.

SIB LAN1 and SIB LAN2 connect working positions and UO, and enable connection with computer network of a system user (Telekom) for transfer of charging data. Both LANs use Fast-Ethernet technology, and TCP/IP protocol.

Working positions of SIB are PCs with headsets and a software client. There are:

- Operator working position: accepts wake up reservations, performs calling number verification and displays basic statistics
- System working position:
 - supervises the system
 - generates and displays the statistics
 - displays alarms
 - configures the system
 - generates and prints the reports

SIB functions

Wake up reservations are accepted automatically or with a help of operators. SIB accepts reservations automatically if:

- Originating switch can send full number of calling line (identification)
 - Calling party uses a tone dial phone
- The detection of these conditions is performed by an interactive dialogue of SIB and calling party phone.

If it is impossible to place the reservation automatically a connection with operator is built, and the operator fills in the data base. Operator can check if the subscriber is calling from its own number (to prevent malicious calls).

Wake up call is always automatic. The call attempt time is maximum 40 s, corresponding to 8 sequences of call control tone. If the subscriber does not answer the first call attempt, there will be another after 2 minutes. After the wake up realisation the report is generated in corresponding UO which writes it to another UO. Report on causes of failed calls can be viewed on system working position immediately.

Wake up calls data base is kept in two copies on two UO, and in case of failure of one UO it is always available on another. It consists of:

- Phone number
- Wake up time
- Day, hour, minute of call reservation
- Official number of operator who accepted the reservation (if the number is 000 the reservation was automatic)
- Day, hour, minute of first wake up call attempt
- First report
- Day, hour, minute of second wake up call attempt
- Second report

Statistics

- Number of calls (total, automatic, semiautomatic)
- Number of calls written in the data base
- Number of drop-of calls
- Number of low waiting calls
- Average waiting
- Average duration of incoming calls
- Average duration of wake up service (outgoing calls)
- Realised traffic per voice channels
- Effective working time of operators (time of login, logout, pause)
- Wake up statistics (number of reservations, number of realised calls, number of not realised calls, cause of not realised calls, etc)

Maintenance

- Configuration of data on:
 - operators (login codes and working permissions)
 - trunks (signalization, direction of channels)
 - charging (N1 – number of impulses in reservation phase)
- System overview in real time:
 - working positions
 - trunks
 - DK block modules
 - UO block conditions
- On-line supervision:
 - PCM trunks
 - DK blocks boards
 - connecting of operators to the system
- Alarm generation and display
- System management:
 - condition of all modules of the system
 - reset and turn off of modules of the system
 - blocking of the service

