



Paya Communication I.N.D.

[www.payaco.com](http://www.payaco.com)



# CARIN-IP1

# Introductory

- ❑ In line with the need to the PSTN and IT Infrastructures, **Paya Communications Industries (PCI)** started its activities in VoIP Platforms relying on its R&D Potential Capabilities and via utilizing the World's most updated Protocols such as **SIP, H.323, H.248, V5.2, SIGTRAN**, etc.
  
- ❑ PCI could succeed in producing its VoIP Equipment in the three below categories:
  - ❖ **Transit Switch Class-4**
  - ❖ **Class-5**
  - ❖ **Carrier Class**
  
- ❑ In spite of the existence of many difficulties in the Tough road ahead such as lack of availability to the Technological Resources and several Obstacles in the Implementation of these Platforms, by the grace of God, we could succeed to fulfill the process and are still progressing to achieve our goals.

# Paya Products lines – in short

## **CORE Network**

- Switching (softswitch, gateways)
- SBC
- Media Gateway controller

## **Applications**

- Residential (telephony, VAS)
- PBX Trunking
- Protocol Development

# Paya Products – in short

Paya makes **SOFTWARE**, that runs on standard servers or Virtual Machines.

- Upon dimensioning, SW modules are delivered on mutualized or dedicated HW / VM
- All components are delivered over secured HW / VM (clusters & high availability)

Paya makes **HARDWARE** for Media management (transcoding, signal processing), where expertise is needed



# Carrier-grade Voice Switching

The NextGen Way

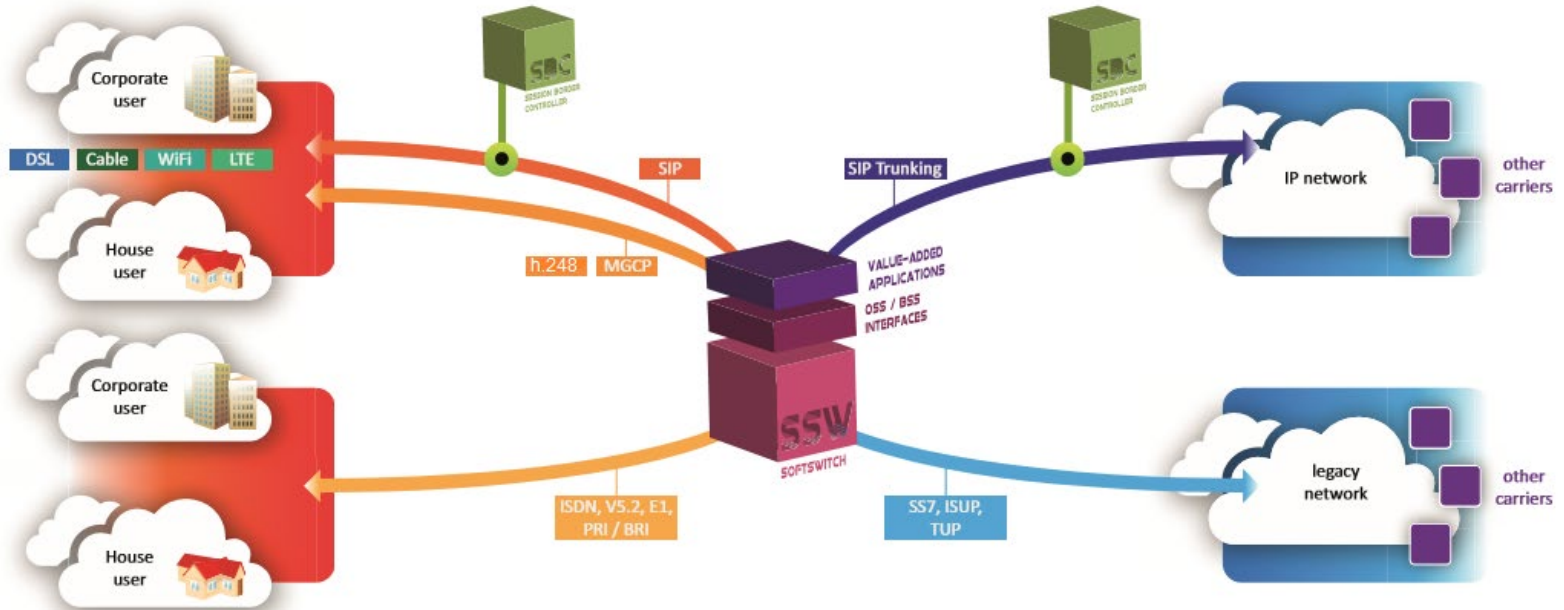
## A UNIQUELY MODULAR PLATFORM

- Using carrier-grade technology, Paya has developed a highly modular and scalable platform, incorporating all the components of a powerful public telephony switch in a compact, standards-based, and easy-to-manage. carriers can design centralized or distributed architectures reaching small, medium, and large density POPs with the best performance ratio.



# Carrier-grade Voice Switching

## The NextGen Way



# Paya Softswitch platform

**Paya Softswitch Platform, delivering advanced Trunking (Class-4) and Access (class-5) services across any broadband or legacy local loop and core network**

- ❖ **Small and very large networks**
- ❖ **Powerful trunking**
- ❖ **Network Function Virtualization (NFV) solution**
- ❖ **Open and flexible solutions**
- ❖ **IP TDM telephony**

# Class-5 Subscriber Key Services

Paya softswitch offers a rich set of services for residential as well as for business users. Here is a non-exhaustive list of these services.

## Numbering Features

- Abbreviated dialing
- Direct dial-in
- Emergency numbers
- Local number portability
- Pre-selected carrier

## CLI Features

- Caller ID
- CLIP/CNIP on call waiting
- Per-call CLIR

## Call Handling Features

- 3- and 6-party conferencing
- Call completion on busy subscriber (CCBS, national dependencies) (POTS, MGCP)
- Call deflection
- Call forwarding
- Call hold/retrieve
- Call park (MGCP) (permanent, per-call)
- Call waiting
- Do not disturb
- explicit call transfer
- General deactivation
- Lawful intercepts
- Prompting, Messages, & Music
- Change of number message
- Customized ring-back tone
- Feature activation prompt
- Message waiting indication
- Multilingual network announcements
- Busy lamp field
- Call pickup
- Call transfer (blind or supervised)
- Click to dial
- Hunt groups (longest idle, cyclic, linear, random, parallel)
- Public or private dialing plan
- SIP roaming
- Closed User Group
- SIP forking

## Call Barring & Call Protection

- Anonymous call rejection
- Call forwarding restriction
- Incoming call barring
- Outgoing call barring
- Line locking
- Malicious call identification
- Protect against call forward
- Suspend subscriber

## Accounting & Billing

- Advice of charge
- Group account codes
- Individual account codes

## Fixed-Mobile Convergence

- Unique number for fix and mobile terminal
- Routing incoming calls either on the fix, on the mobile or on both.
- Transfer calls between fix and mobile
- Abbreviated number dialing



# Technical Specifications

## Capacity

- Up to 100,000 Class-5 subscribers
- Up to 8,000 E1
- Up to 8,000,000 BHCA
- Up to 1024 SS7 linksets and 2048 signaling link per system, multiple SS7 ISUP variant simultaneously

## Subscriber Database

- Cluster of databases supporting 1 million of subscribers shared between several softswitches.
- Open APIs for easy integration in a provisioning and workflow system
- Same database handles TDM and IP subscribers

## Numbering Plan

- E.164 extended

## TDM Signaling Protocols

- V5.1, v5.2 release 2 for controlling DLC
- Analog phone, fax, modems
- BRI, PRI – ISDN network side
- PRI – ISDN user side
- SS7 ISUP and SS7 TUP
- R2

## SS7 Signaling Protocol

- INAP C51
- ITU-T Q701 – Q707
- ISUP V2, V3, ISUP ETSI
- Over 30 national ISUP variants supported

## ISDN Signaling Protocol

- ITU-T Q921 – Q931
- EuroISDN ETSI-1 and ETSI-2
- Over 15 ISDN national variants supported
- Q.SIG

# Technical Specifications

## IP Signaling Protocols

- RTP
- SIP, SIP-T
- SIP-I according to Q.1912.5
- Video support using SIP
- MGCP/ NCS / H.248

## VoIP Border Control <sup>1</sup>

- IP address and topology hiding
- Complete Nat traversal engine using and MGCP
- Dynamic 'pinhole' opening/closing
- Signaling and media replication for lawful intercept in VoIP to VoIP calls

<sup>1</sup> For SIP VoIP Control features are handled by SBC except lawful intercept which is handled by the Softswitch

## QoS, Network Management, Testing

- ISDN and PSTN test call
- Generated test traffic
- Traffic measurement
- Continuity check tests
- Detailed call statistics

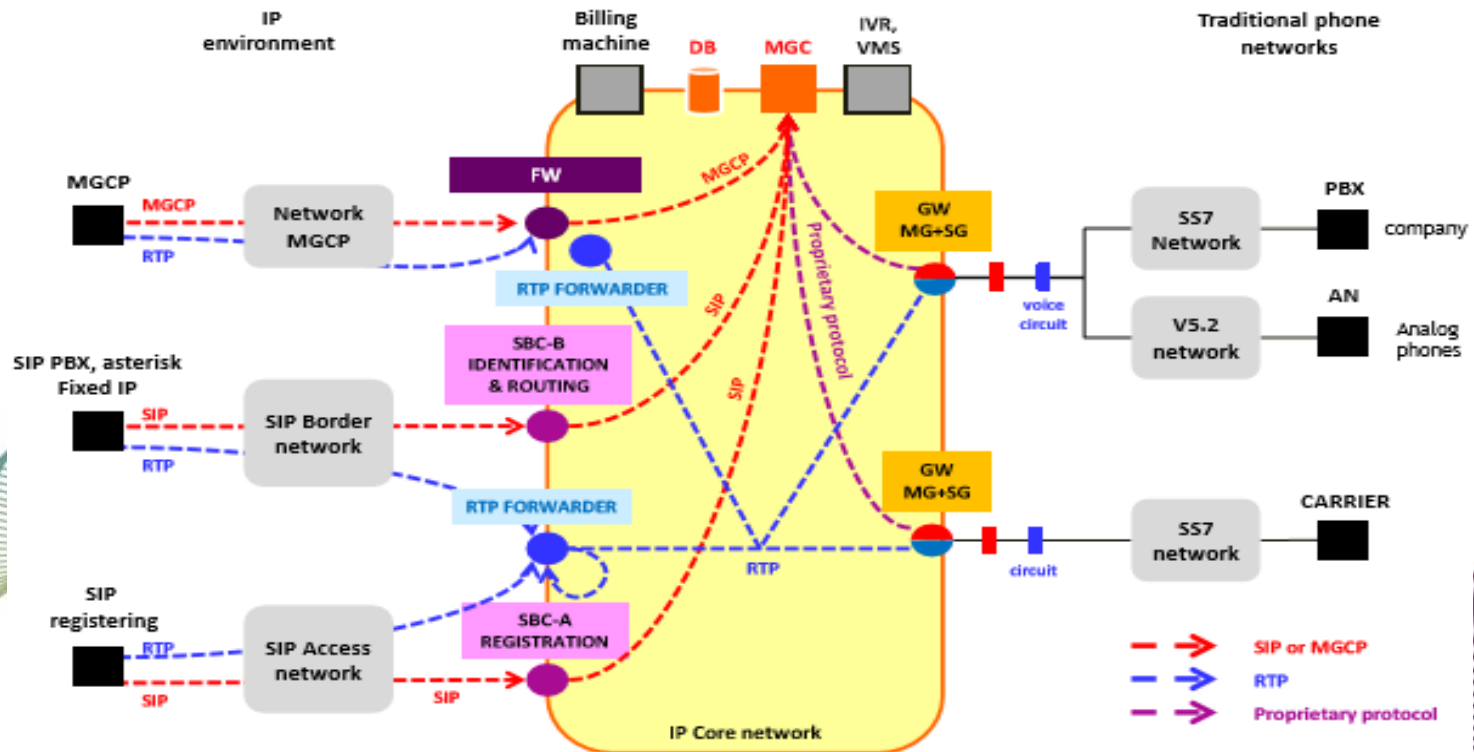
## System Management

- Ethernet connection
- User-friendly Web interface
- Telnet, SSH, SFTP, SNMP
- Advanced administrator profile management

## Transit & Routing Services

- SIP trunking
- Alternate routing
- Authentication
- Backward charging message
- Built-in media resources for announcements
- Reselection on call failure
- Call detail record generation (CDR)
- Call duration control
- GMSC services, interrogating an HLR in SIP.
- INAP SSP & SRF (service switching point & specialized resource function)
- Least cost routing (LCR)
- Load sharing
- Local number portability (LNP)
- Time-based routing

# Functional Architecture





**Thank You!**