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**Squire Technologies**

[www.squire-technologies.com](http://www.squire-technologies.com)

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Subscriber Management Suite

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# Subscriber Management Suite

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The Subscriber Management Suite provides a common platform to deliver, carrier grade HSS, HLR, EIR and AuC databases.

Seamless support for network interfaces allows rapid deployment in LTE / IMS / EPC / GSM networks

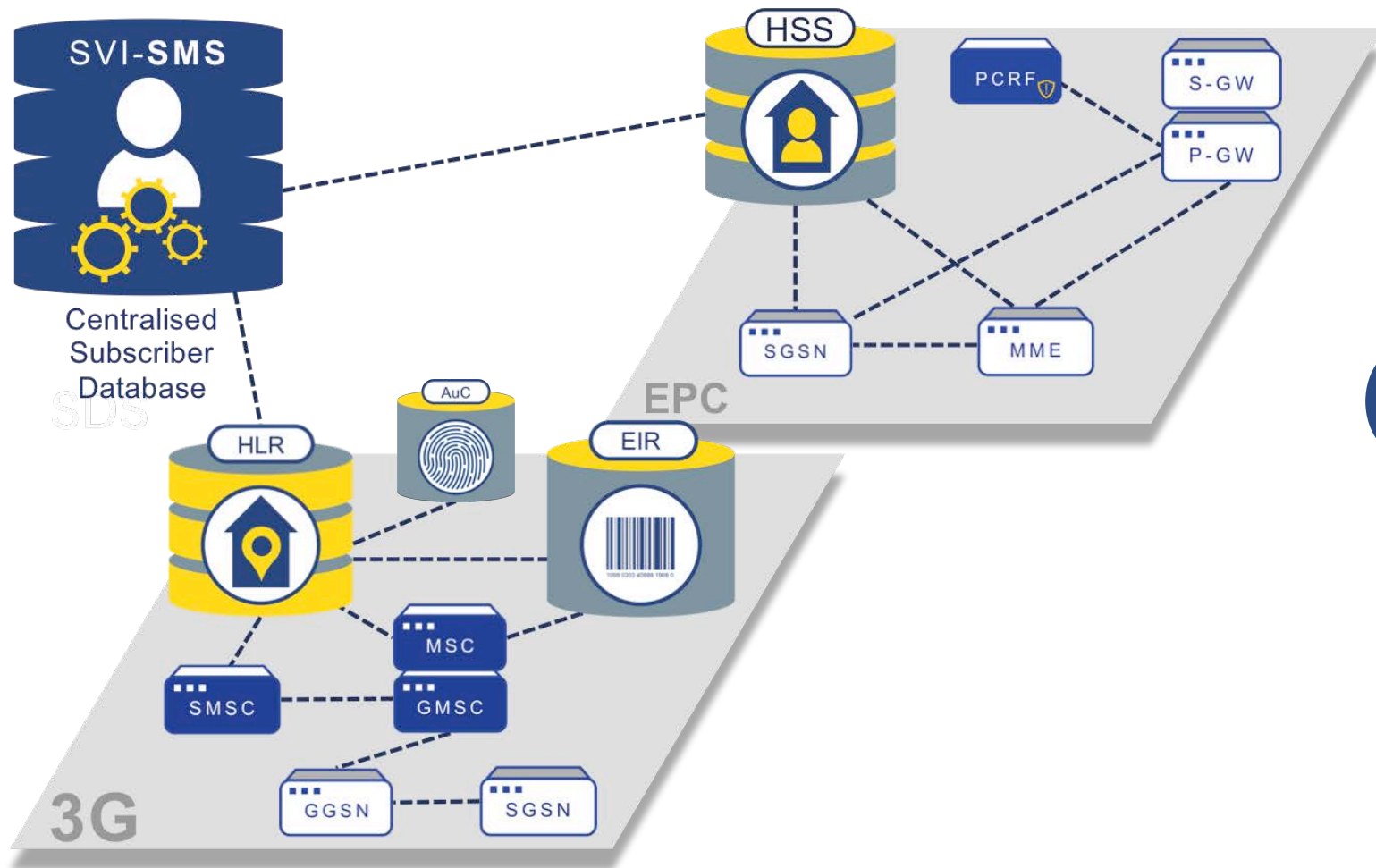
Integrated management platform consolidates subscriber details in a centralised database providing converged registration, authentication and location updates.

Significantly lowers network migration costs



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# Subscriber Management Suite



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# Benefits

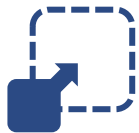
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**Rationalise** - provides centralisation of subscriber details in one logical place



**Cost Effective** - rapidly extend or replace existing subscriber databases



**Scalable** - start small with single virtual instance and scale to full geo-redundancy to meet demand



**Powerful API's** allow all functions to be interfaced by OSS / BSS over SOAP



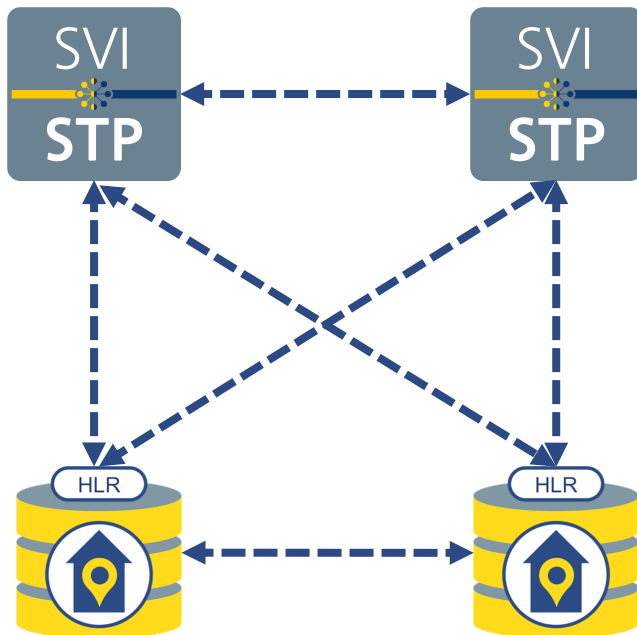
**NFV/SDN**  
Virtualisation support



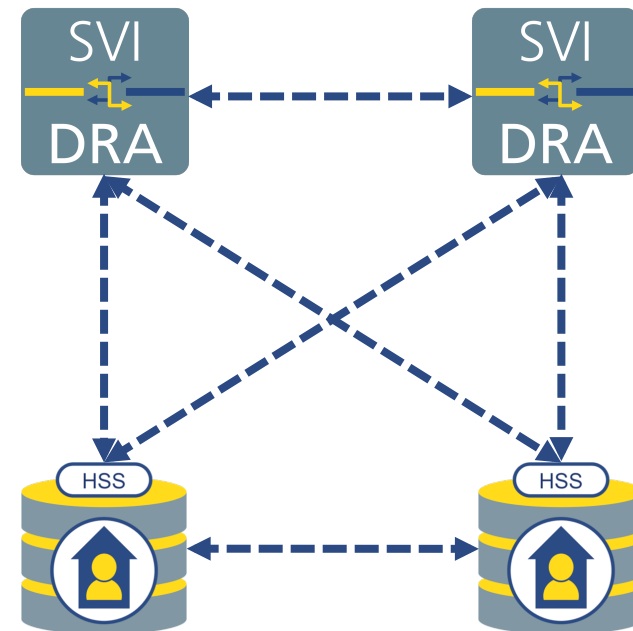
**Multi-tenancy** support on the same deployment and multiple network appearances within the same tenant

# Redundancy

Full suite of redundancy options available including Active-Active, Active-Standby and full Geo-redundancy support :

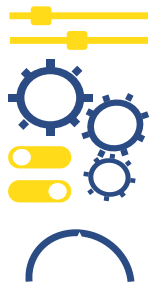


- Database synchronisation and replication insures data integrity
- State replication from node to node to recover from a server loss



- Transaction management to insure consistency across all nodes in case of failure

# OA&M



## Configuration

- Web-based
- XML / CLI support for
- mass updates



## User Access

- Secure remote access
- Multi user / multi permissions support



## Alerts

- SNMP support



## Logfiles

- Detailed log files
- Real-time onboard analysis

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# Virtualisation Support

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- Virtualised HSS/HLR can be deployed on any COTS x86 hardware, with support for VMware ESXi hypervisor and KVM.
- Ensures incremental scale and performance elasticity by adding HSS/HLR nodes.
- Ease of replication, redundancy, expansion and in-service upgrades.



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# HSS – Home Subscriber Server

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- The Home Subscriber Server (HSS) serves as the primary database repository of subscriber information within an IMS or Evolved Packet Core.
- The HSS exchanges messages with an MME or a SGSN using the Diameter Protocol.
- The HSS serves as a registration and authentication of mobile subscribers in the EPC network, while also tracking their mobility by acting as the real-time location repository and updating their position in administrative areas handled by MME's/SGSN's.



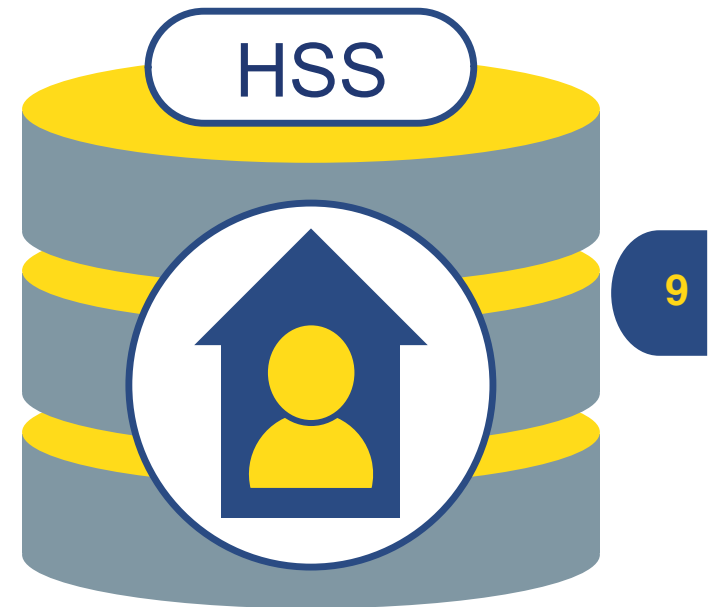


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# HSS Specifications

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- HSS interface support – Diameter S6a (to the MME), S6d (to the SGSN)
- S6a/S6d compliant to
  - TS 29.272 v12.8.0 (Sep 2015)
  - TS 23.401 v12.8.0 (Sep 2015)
- Full HSS data-model based on 3GPP Release 12.
- HSS includes the S13 Diameter protocol in roadmap to provide an EIR control service.



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# HSS Features

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- MREALM Support for multi-realm
- MTENANCY Support for multi-tenancy
- ROAMING Support for Roaming Steering Controls and Screening
- SRVCC Support for Voice Call Continuity Service
- TADS Supports for The Terminating Access Domain Selection (T-ADS)
- ODB Operator Determined Barring
- MMSISDN Multi MSISDN per SIM
- MIMSI Multiple IMSI
- STATS Stack and HSS services and platform stats
- KPIS Protocol KPIs



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# HLR – Home Location Register

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- The Home Location Register (HLR) serves as the primary database repository of subscriber information within GSM/GPRS networks.
- Subscriber policies control all voice, sms and data services running across a GSM network.
- Delivered with an integrated Authentication Center (AuC) and Equipment Identity Register (EIR) it provides a central point for registration and authentication of mobile subscribers.



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# HLR Features

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- CAMEL1/2/3 Customised Applications for Mobile network Enhanced Logic service Phases 1/2
- CAMEL4 Customised Applications for Mobile network Enhanced Logic service Phase 4
- CB-SS Call Barring Supplementary Services
- CF-SS Call Forwarding Supplementary Services
- CW/HOLD-SS Call Waiting and Call Holding Supplementary Service
- ECT-SS Explicit Call Transfer Supplementary Service
- LI-SS Line Identification Supplementary Services
- MPTY-SS Multi-Party Supplementary Service
- ODB Operator Determined Barring
- SMS Short Message Service
- USSD Unstructured Supplementary Service Data service
- MMSISDN Multi MSISDN per SIM includes ATI and PSI
- STATS Stack and HLR services and platform stats
- REPORT Reports on stats over time
- BATCH Batch load of SIM card profiles and SIM cards (e.g. GEMALTO file format)
- MIMSI Multiple IMSI
- MSIM Multi SIM
- MMSISDN Multi MSISDN
- ROAMING Roaming Steering Controls



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# HLR Protocol Compliance

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- HLR interface supports:  
MAP C, D, Gr, Gc.
- The specifics of the MAP protocols are:  
  
TS 29.002 Mobile Application Part (MAP)  
specification R12  
  
TS 23.038 Alphabets and language-specific  
information R12  
  
TS 23.040 Technical realization of the Short  
Message Service R12



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# HLR 3GPP

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- TS 02.72 Customised Applications for Mobile network Enhanced Logic service Phases 1
- TS 03.78 Customised Applications for Mobile network Enhanced Logic service Phases 2
- TS 23.088 Call Barring Supplementary Services
- TS 23.082 Call Forwarding Supplementary Services
- TS 23.083 Call Waiting and Call Holding Supplementary Service
- TS 23.091 Explicit Call Transfer Supplementary Service
- TS 23.081 Line Identification Supplementary Services (CLIP/CLR/COLP)
- TS 23.084 MultiParty Supplementary Service
- TS 23.015 Operator Determined Barring
- TS 23.040 Short Message Service
- TS 23.090 Unstructured Supplementary Service Data service



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# EIR – Equipment Identity Register

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- The EIR provides a mechanism to assist network operators in preventing stolen or disallowed handsets from accessing the network.
- The following lists can be provisioned on the service:
  - Black: Mobile Stations (MS) on the Black List will be denied access to the network
  - White: MS's on the White List will be allowed access to the network
  - Grey: MS's on the Gray List will be allowed on the network, but may be tracked
- Support checking the IMEI of the subscriber.
- Supports checking the IMSI attached to the IMEI.



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- EIR interface supports:
  - MAP Gf Interface
  - 29.002 Mobile Application Part (MAP) specification R12

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# AuC – Authentication Centre

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The AuC function authenticates mobile SIMs connecting to the network and generates keys used in the subsequent encryption of voice, sms and data calls

GSM support :

- A3/A8 Algorithms
- 3GPP TS 43.020

UMTS Support:

- AKA, Authentication and Key Agreement
- RFC 4187 “Extensible Authentication and Protocol Method for 3<sup>rd</sup> Generation Authentication and Key Agreement ( EAP – AKA ) “





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# Product Integration

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The Subscriber Management Suite is fully integrated with Squire Technologies:



## SVI-DSC Diameter Signalling Controller

Dynamic DSC product delivering routing ( DRA), Inter-working ( IWF ) and edge ( DEA ) functionality.



## SVI-STP Signalling Transfer Point

Our flagship SS7 STP product enabling SS7 networking signalling



## SVI-GMSC Gateway MSC

Flexible Gateway MSC terminating mobile traffic over SS7,SIP & DIAMETER

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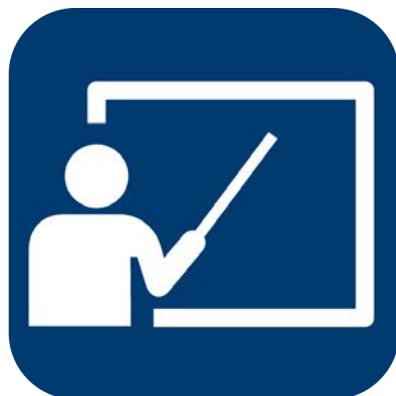
# Product Services

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Installation & Commissioning



Training



Platinum Support



Product Enhancement




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# Find out more...

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