

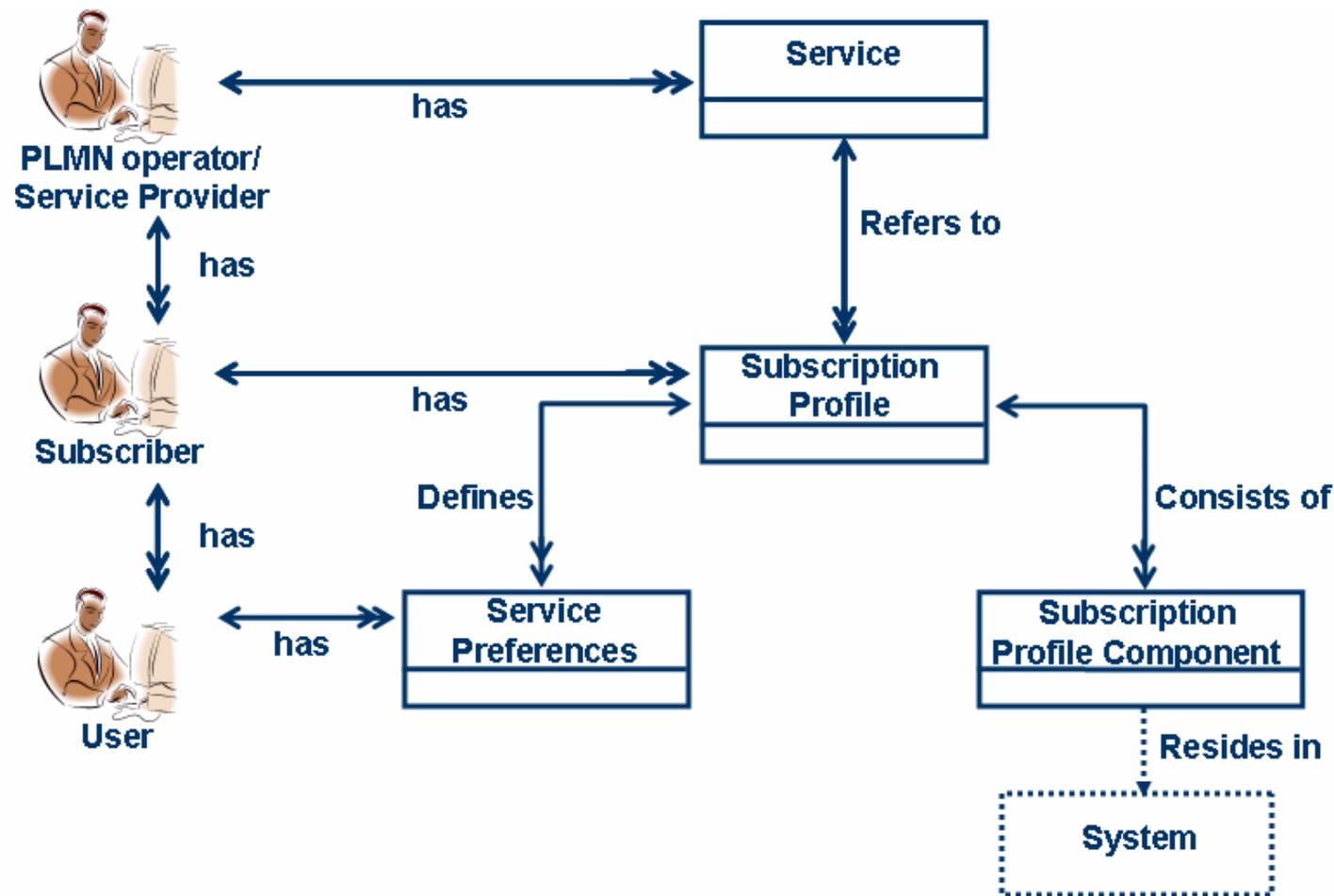
**Title: Results of Study Item on Central Profile Storage
Framework of User Data for network services and
management (TR 32.808)**

Source: Istvan Aba, T-Mobile
Agenda Item (Work item code): Joint SA1, SA2, SA5 Session
Date: 27/06/2007
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Scope of the Study

- **Study problems and potential improvements in the way user data are introduced and handled in the 3GPP based networks.**
- **Investigate the need to introduce a common end-user profile storage framework into 3GPP conformant communication networks.**
- **Significantly enhance the ability of 3GPP based networks to offer complex and combined services in the areas of:**
 - **Multimedia.**
 - **Data services.**
 - **Value Added Services.**
 - **End-to-end applications.**
- **Consolidation and co-ordination of data bases these is needed.**
Initial study of such a Common User Profile Storage Framework based on
- **Provide valuable drive for developing the Common Profile Storage Framework functionality for 3GPP**

Rationale for the Analysis of a Common User Model



Rationale for the Analysis of the Basic Structure of a Common Profile Storage Framework

BTS ... Base Transceiver Station

BSC ... Base Station Controller

MSC ... Mobile Switching Center

GMSC ... Gateway MSC

HLR ... Home Location Register

VLR ... Visiting Location Register

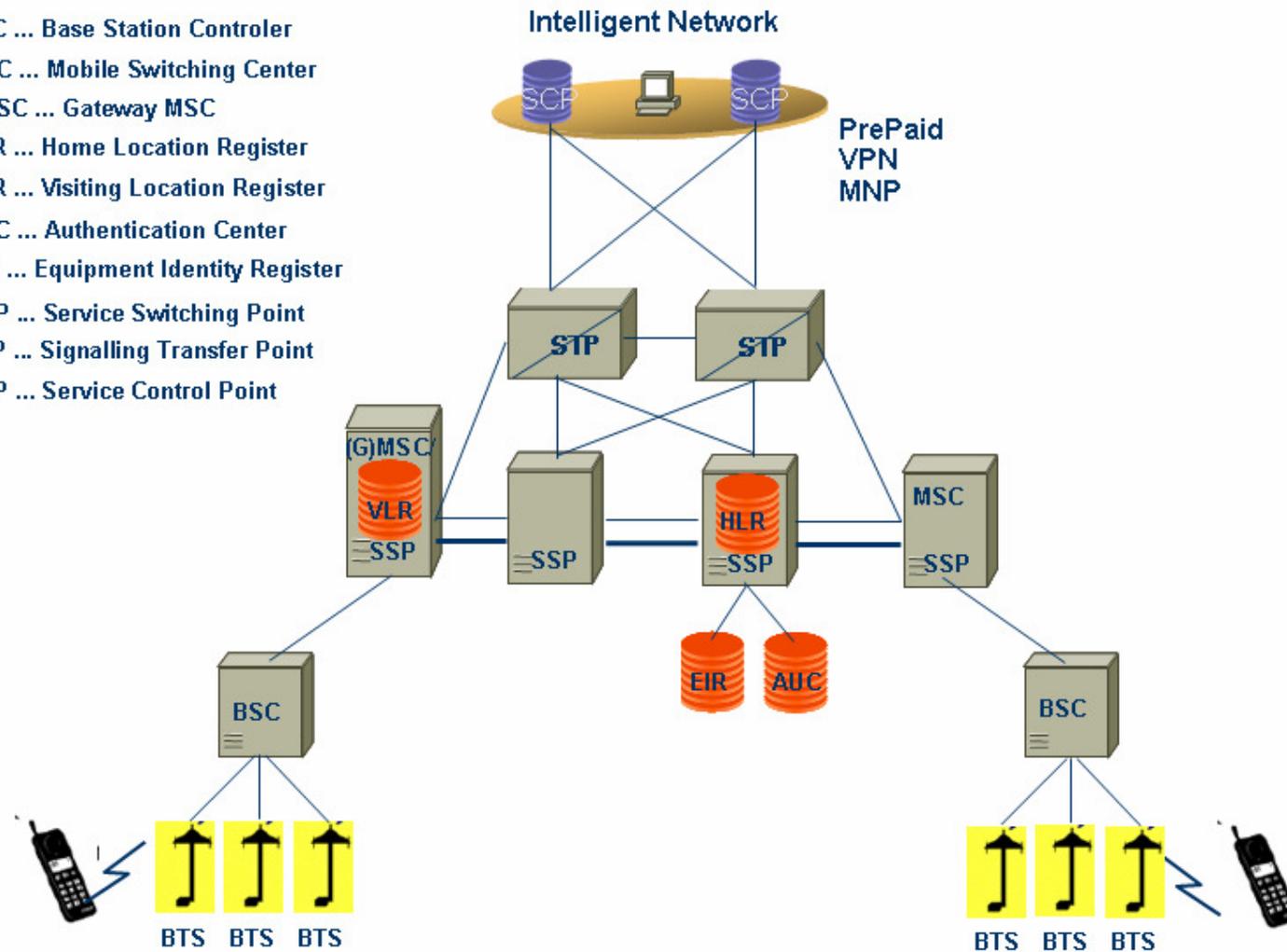
AUC ... Authentication Center

EIR ... Equipment Identity Register

SSP ... Service Switching Point

STP ... Signalling Transfer Point

SCP ... Service Control Point



Motivation – Use Cases

- End users covered by business cellular and private cellular contracts with the same provider
- Provide combined services spanning CS, PS and IMS based on knowledge about the user's UEs and his identities
- User makes use of an IN service, which allows setting call forwarding numbers
- End user life cycle management
- High data redundancy
- NEs providing end user oriented services need to be highly available
- Allowing for a simpler handling of data queries within an operator's domain
- Utilise location information stored in the VLR

Considerations on a Common User Model

Network Functions and Management Applications Using Subscriber/User Data

- Network Supporting Services
- Enabling Services
- Network Hosted Business Services and Network functions
- Generic User Profile (GUP)
- Management Applications
- System Management
- Personal Network Management

Basics of a Common User Data Model

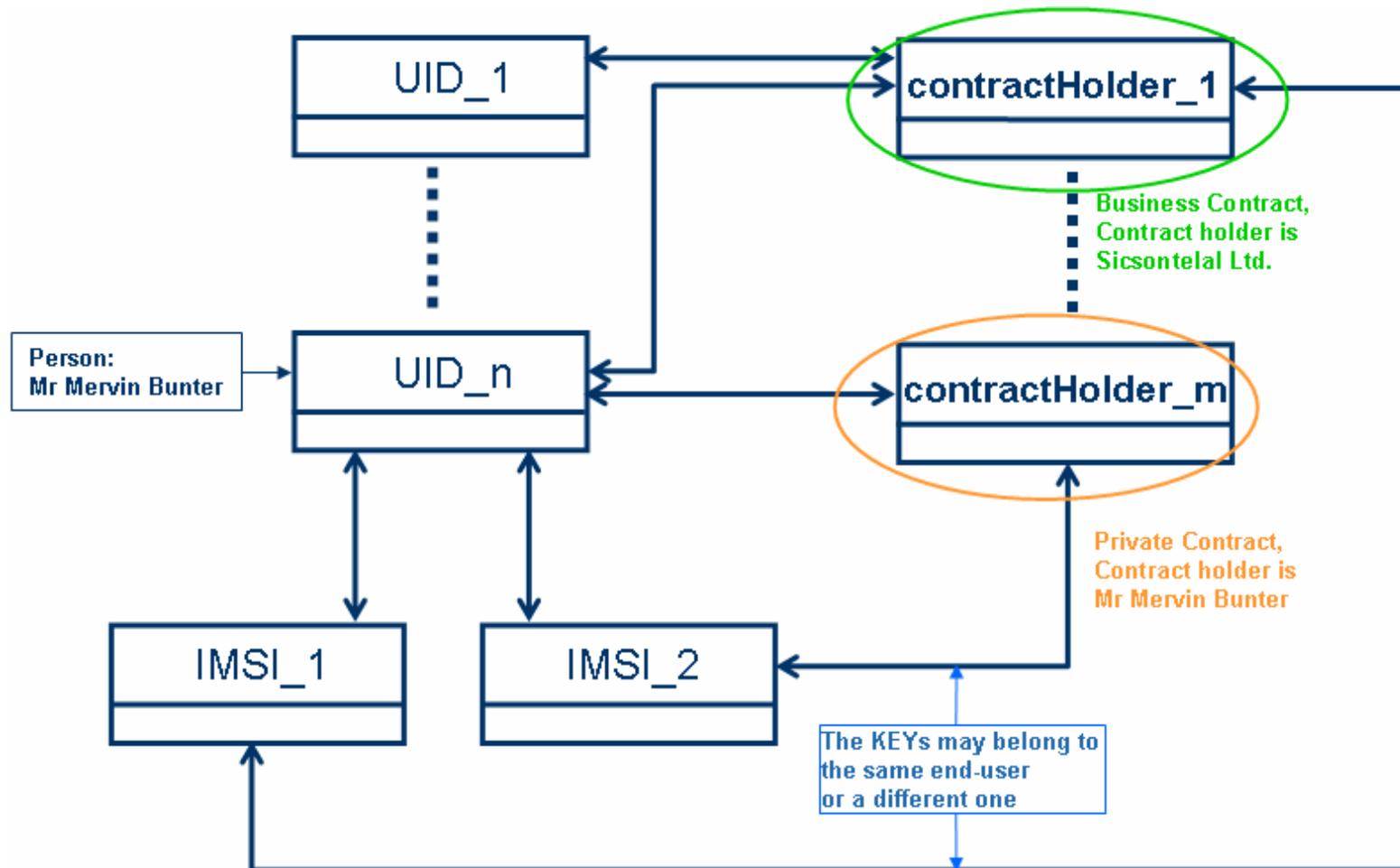
Types of Data Assigned to an End-User

- Profile data
- Privileges
- Preferences

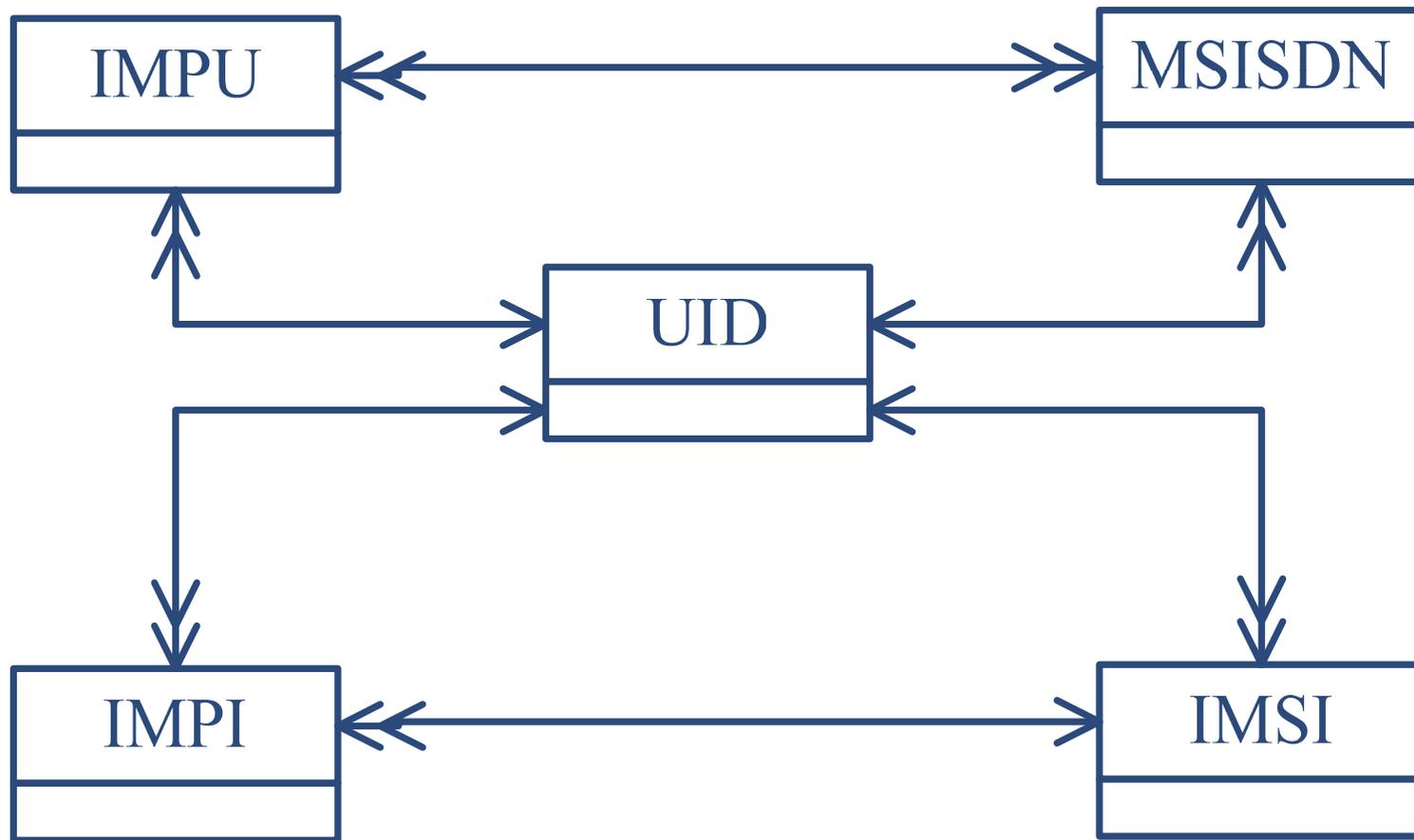
The Identity of an End-User

- UID
- Representation of End-User Identity through Keys
- End-User Identity Management

Relation between an End-User and a Subscriber



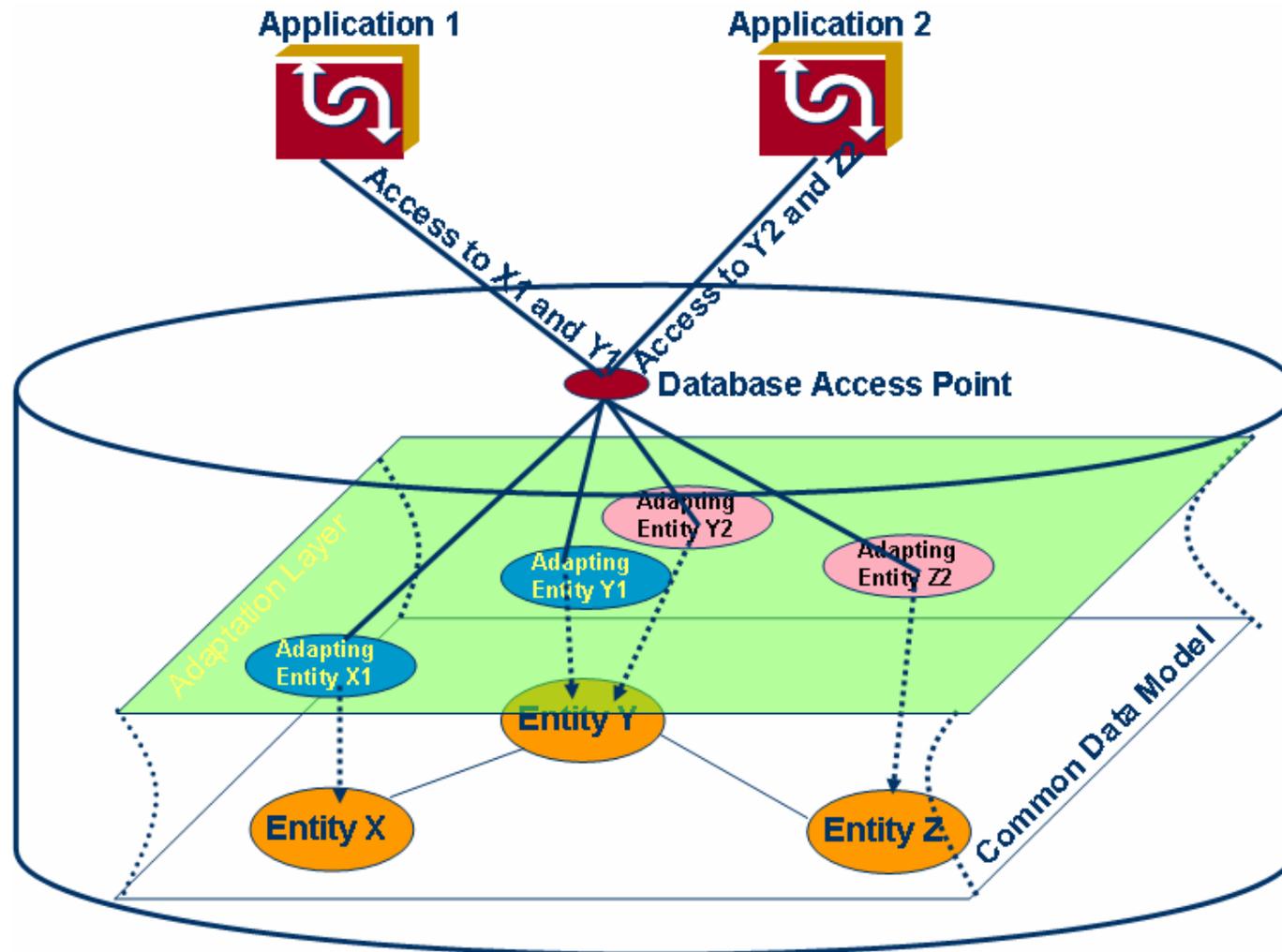
Relation between End-User Permanent Identities



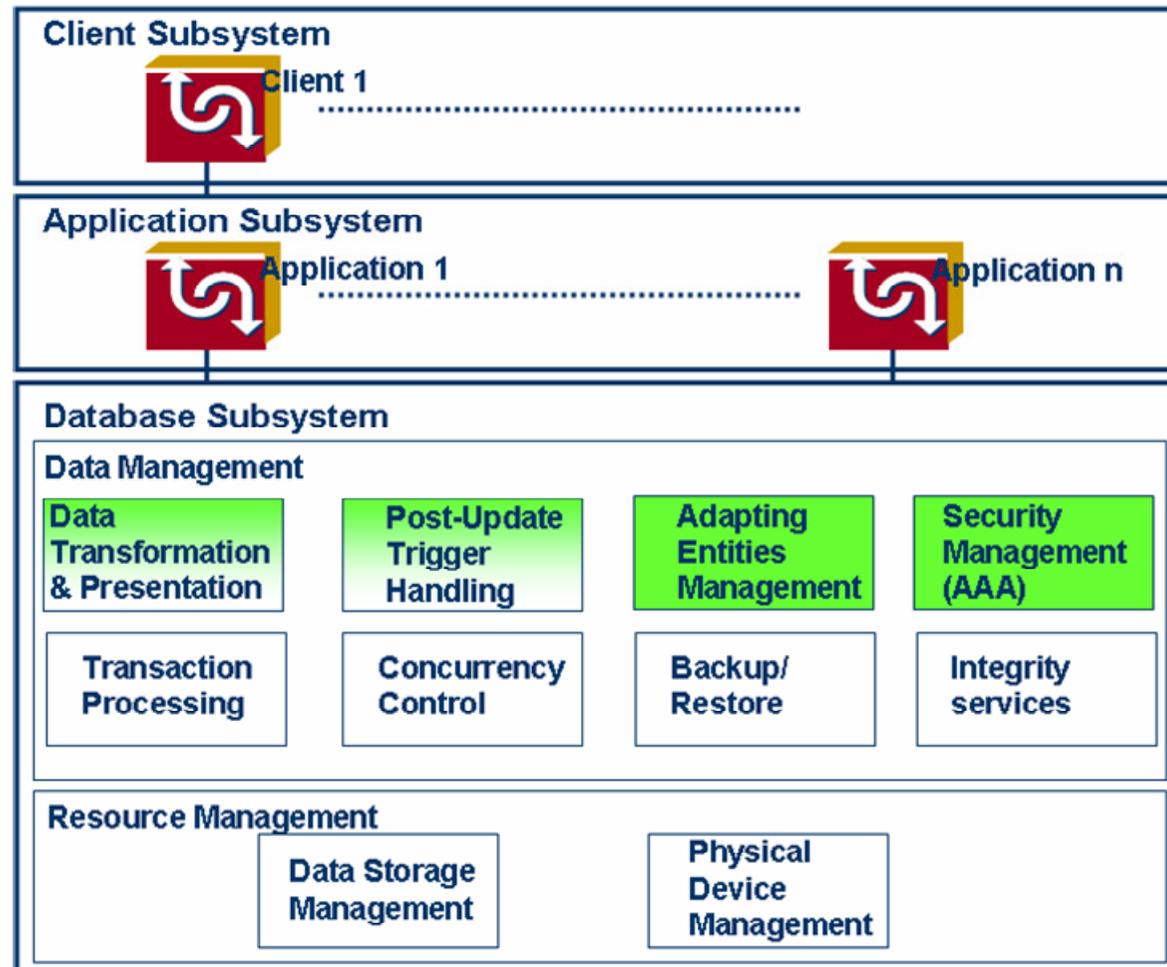
Further Aspects of creating a Common User Data Model

- Semantic Identity of Data Entities
- Adapting Entities
- Post Update Triggers
- Adaptation Layer
- Levels of Data Consolidation

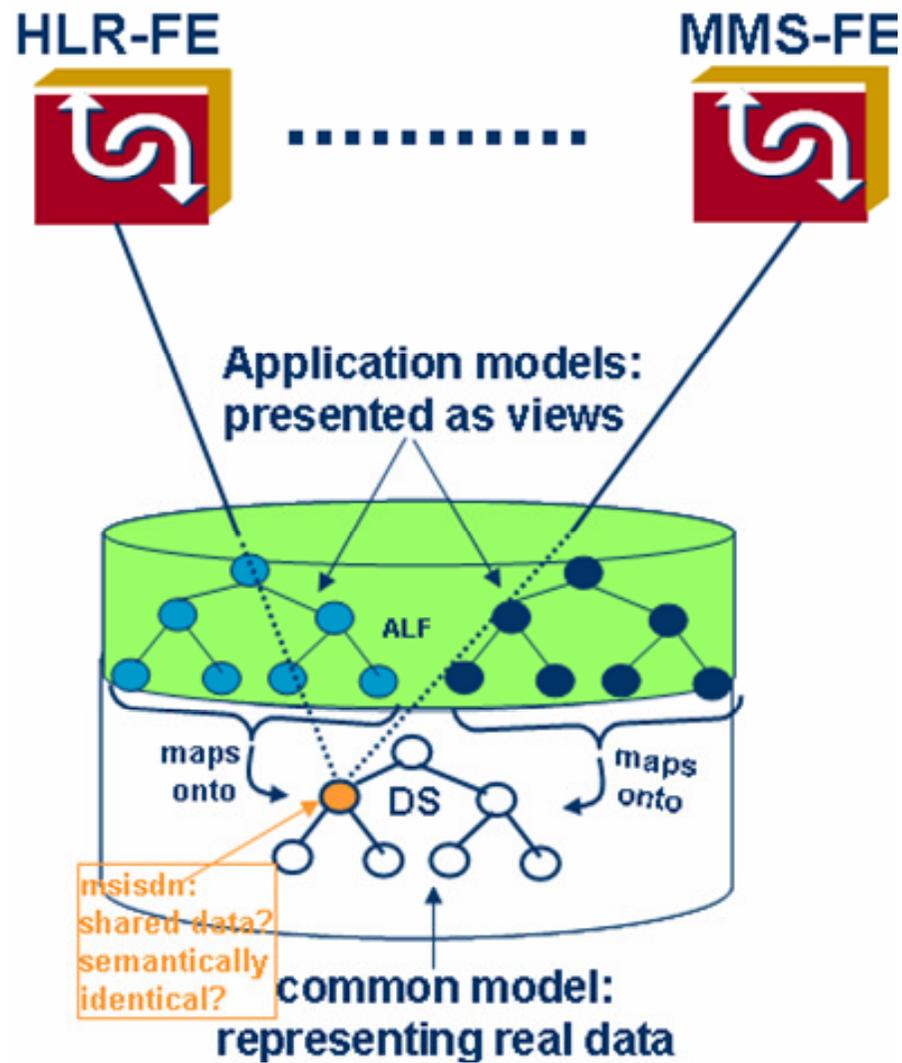
Overview of a Common Object Model with Full Consolidation (Fat Adaptation Layer)



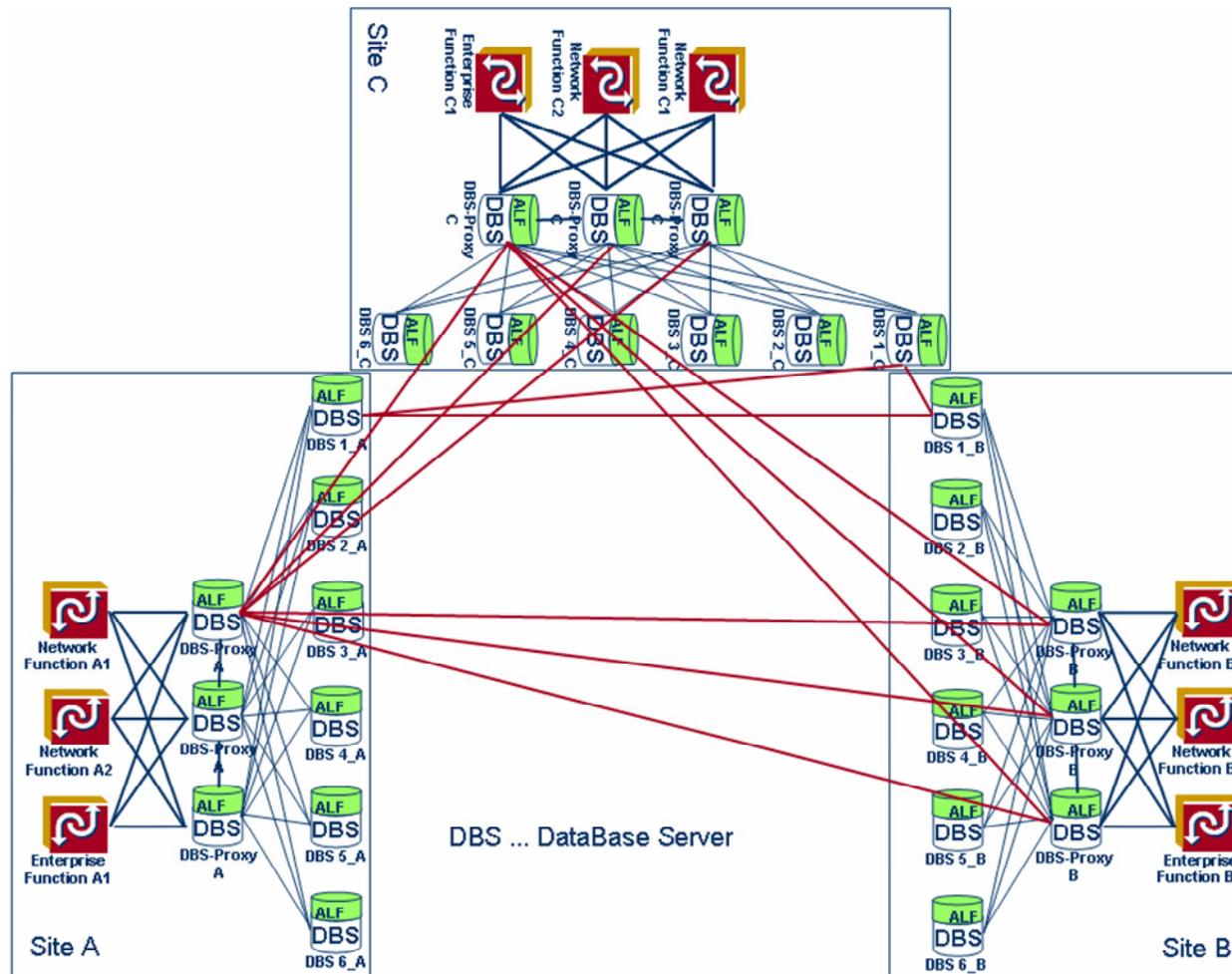
Basic Structure of the Common Profile Storage Framework (CPSF)



Centralized Approach to the CPSF



Physical view of the Centralized Approach to the CPSF Using a Distributed Database



CPSF Tooling

Allow the operator to

- define a common data model and its adaptation layer
- remain vendor independent in choosing both the CPSF and the network functions / management applications
- manipulate his data structures as well as the content in a running system

Tooling needed for

- data migration support;
- meta data manipulation and repository;
- a tool management system; and
- a report/documentation system

Gap-Analysis Results

- Concept of the End-User
- Concept of a Model Entity for a Contract Holder/Subscriber
- Concept of a Contract
- Introduction of a network function “Common Profile Store (CPS)”

Conclusions

- Introduce the Concept of an End-User
- Introduce the Concept of a Contract
- Introduce a network function “Common Profile Store (CPS)”