Oracle Communications Unified Inventory Management

Oracle Communications Unified Inventory Management (UIM) is an open, standards-based application that provides an intelligent inventory of communications services and resources. Its flexible, extensible architecture enables the rapid design and efficient delivery of customer-centric services along with the management of current and next-generation resources and technologies. With its inventory federation framework and pre-built support for multiple service and technology domains, UIM cost-effectively addresses both strategic inventory needs across the enterprise as well as discrete requirements in an existing environment.

**PRODUCT OVERVIEW**

Oracle Communications Unified Inventory Management enables communications service providers (CSPs) and enterprises with large networks to:

- Model, manage and provide full lifecycle management of customer services and resources
- Support complex inventory-related business processes
- Provide real-time, unified view of customer services and resource inventory
- Replace existing inventory systems or work cooperatively with them

**BUSINESS BENEFITS**

- Enables rapid introduction of current and next-generation services and technologies
- Facilitates faster time to revenue through pre-built support for complex next-generation services
- Enables rapid deployment with existing inventories through federation
- Faster in-service through pre-integration with complementary Oracle applications
- IT cost reductions through common technology platform with complementary Oracle applications
- Seamless extension into NFV with holistic support for both physical and virtualized resources and network services

![Various screen captures of UIM’s graphical user interface.](image-url)

UIM’s inventory management capabilities include:

- **Managing physical and logical resources.** UIM models and manages hardware resources such as racks, shelves, cards, ports, and connectors; and logical resources such as network addresses, media streams, and telephone numbers.
- **Managing connectivity.** Connectivity is the ability to transfer information to and from devices and locations. UIM models and manages connectivity by representing physical and logical resources, the connections between those resources, the capacity of the resources, and the locations of the resources.
- **Managing networks and topology.** Networks are modeled logically, by associating resources to network nodes and network capacity to the...
KEY FEATURES

- Flexible, standards-based inventory of services, logical and physical resources
- Versatile catalog environment
- Pre-built support for numerous service and technology domains
- Federation framework for cooperation with existing inventory
- Common inventory framework for physical and virtualized domains
- Modular SOA-based architecture with flexible deployment and integration options

connectivity model. Topology features enable the design and management of networks graphically and by using maps.

- **Managing services.** UIM provides an end-to-end view of fulfilled customer services. Services are configured with resources which can be updated over time.
- **Managing lifecycles.** UIM manages the lifecycles of resources and services as they are planned, placed in service, and retired. Different kinds of entities have different lifecycles corresponding to how they are used in the inventory.
- **Managing business processes.** UIM supports business processes by providing features for planning and resource management. For example, business interactions can be used to plan activities such as service fulfillment or equipment build-outs.

Through integration with other Oracle Communications applications and third-party systems, UIM plays a vital role in service fulfillment and network resource management.

**UIM Role in Oracle Communications Rapid Offer Design and Order Delivery (RODOD) Solution**

Oracle Communications Rapid Offer Design and Order Delivery (RODOD) is the industry’s only fully integrated, productized solution that cost-effectively reduces time to market for new offer introduction, and enables accurate order delivery across all customer service channels.

In the RODOD solution, UIM interworks with other Oracle components including Oracle CRM, ProductHub and AIA for communications along with Oracle Communications Order and Service Management (OSM), Design Studio (DS) and Billing and Revenue Management (BRM) to provide service inventory for:

- Synchronized Offer Design
- Order Capture and Orchestration
- Order Lifecycle Management

**UIM Roles**

- Ensures effective inventory management and resources availability
- Provides number mgmt (e.g. telephone number, VLAN IDs, etc) within service/resource inventories
- Supports high volume of queries, reservations and assignment of resources (e.g. TNs) to services

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**UIM Role in Oracle Communications Rapid Service Design and Order Delivery (RSDOD) Solution**

Oracle Communications’ Rapid Service Design and Order Delivery (RSDOD) is the industry’s leading off-the-shelf product-based solution to support the rapid design and delivery of services across all technology domains.
KEY CAPABILITIES OF ORACLE COMMUNICATIONS UNIFIED INVENTORY MANAGEMENT:

- Manage Location — model and interact with geocoding systems (i.e. Oracle Spatial) to provide strong location validation
- Manage Assets – model and track virtually any type of physical and logical inventory including network addresses and telephone numbers
- Manage Connectivity – model channelized SONET/SDH, and T/E/J-Carrier connectivity with a complete standards-based signal architecture to work cohesively with packet connectivity
- Manage Networks – model virtually any type of network and track capacity when services are allocated to network resources
- Manage Services – model virtually any type of service and assign services over available resource capacity
- Manage Network Topology – design and maintain network connectivity in a graphical view rendered with maps at different view levels
- Manage Extensible Resource Lifecycle – transition resources through various states and keep historical versions of changes to resources and services
- Provide Business Planning – plan equipment build outs by creating business interactions to track planned equipment resources and enable them at a later date
- Manage Reservations – reserve resources for projects or customers for allocation at a later date

In the RSDOD solution, UIM interworks with Oracle Communications’ DS, OSM, ASAP and IPSA components, to support:

- Balanced Service Design Methodology
- Dynamic Patter Driven Fulfillment
- Comprehensive Order Lifecycle Management
- Modular and Domain Agnostic Capabilities

UIM Roles
- Definition & lifecycle management of services, resources and identifiers
- Automated creation and management of resources and tracking of changes to service configurations
- Association of service instances to product instances or customers

Figure 3. UIM context within Oracle Communications RSDOD Solution.

UIM Role in Oracle Communications Network Resource Management Solution

Oracle’s Network Resource Management (NRM) solution provides the requisite operational readiness support to enable the fulfillment process. The NRM solution enables Service Providers and IT Enterprises to plan, build, optimize and transform their communications networks, supporting the evolution of network and service resources across all technology domains.

In the NRM Solution, UIM interworks with Oracle Communications DS, Network Intelligence and Network Integrity applications, to support:

- Network Inventory
- Network Discovery & Reconciliation
- Network Planning and Optimization
- Network Process Management

UIM Roles
- Definition, planning and readiness of network infrastructure
- Database of record for lifecycle management of physical and logical network resources: “as-planned”, “as-is”, “as-was”
- Kept in sync with network through discovery & reconciliation processes

Figure 4. UIM context within Oracle Communications Network Resource Management.
UNIFIED INVENTORY MANAGEMENT

An effective solution to improve the quality of data supporting key business processes, reduce costs and provide higher service profitability

RELATED PRODUCTS

Unified Inventory Management is pre-integrated with the following complementary Oracle Communications products:

- Network Integrity
- MetaSolv Solution
- Design Studio
- Network Intelligence
- Network Service Orchestration

RELATED SERVICES

The following services support the Unified Inventory Management product:

- Business Case Development
- Inventory Federation Strategy
- Inventory Operations Strategy
- Planning and Implementation
- Custom Report Development
- Product Support Services

UIM in the NFV solution

UIM is the basis for Oracle Communications Network Service Orchestration (NSO) solution, which provides NFV Orchestration as defined by ETSI’s MANO standard. NSO has a wide range of integration capabilities with an open API to client systems, allowing it to orchestrate multi-vendor NFV implementations. NSO can be combined with the RSDOD solution to provide a complete service and network orchestration solution for hybrid physical and virtual networks. For more information, refer to the NSO data sheet.

Figure 5. UIM and NSO and in the NFV solution.

UIM Architecture

As part of the Oracle Communications application suite, UIM and related Oracle Communications applications are designed to work together seamlessly on a common technology platform – Oracle Communications Foundation Stack based on Oracle Fusion Middleware. The UIM application employs a highly modular architecture enabling both technical and commercial control of deployment footprints as illustrated below.

Figure 6. Oracle Communications UIM Architecture.

The UIM application consists of:

- A Core platform with design time modeling of complex inventory structures and behavioral rules through their complete lifecycle together with a technical service catalog to support service fulfillment of customer services. Design time
configuration is enabled through Design Studio, the single, integrated design time environment across UIM and complementary Oracle applications. Design Studio offers best-practices graphical service and resource modeling of customer services and resources. The core platform also provides a set of Web services APIs for service-oriented architecture (SOA) integration.

- A set of functional managers that can be deployed individually or in sets to manage certain entity types such as telephone numbers, logical or physical resources within the network and IT infrastructure or to support service fulfillment through the service catalog.
- A number of optional Technology Packs that provide pre-configured support for specific domains of network and service technologies that include specifications, characteristics, rules, capacity models, etc., as typically used for the targeted domain. Customers may license Technology Packs and extend them or develop their own custom Technology Packs using Design Studio.

The information model in UIM is based directly on the industry-standard TM Forum’s (TMF) Framework Shared Information Data (SID) model. This information model:

- Enables the representation of practically any communications inventory object – current and next generation.
- Leverages significant and ongoing contributions and best practices from the communications industry into the TMF SID.
- Uses a common language representation that greatly simplifies standards-based integration between systems reducing cost, time and risk in integration.

The alignment between UIM’s information model and TMF SID is portrayed below.

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**Strategic Advantages of Deploying UIM**

UIM’s next-generation architecture and deployment flexibility offers several key advantages to service providers, including:

**Modular deployment approach:** UIM is designed for modular deployment which enables initial adoption for a specific and bounded business problem often in close proximity with incumbent inventory solutions. It may then be easily expanded to provide additional capabilities. For example, it may initially be deployed to manage logical resources, and then expand to manage customer services and associated physical resources.

**Flexibility with inventory federation:** UIM provides a flexible inventory federation framework that complements and leverages existing inventory investments avoiding the
need for an inventory migration or transformation program. This framework supports different implementation scenarios such as:

- Existing inventory systems manage the network connectivity for connection oriented technologies and UIM integrates with them to holistically manage the services and connectivity—helping to rapidly introduce next-generation services by leveraging existing inventory investments.
- Oracle Communications MetaSolv Solution manages service configurations and federates to UIM as the resource repository of VLAN ID pools.

**Unified, convergent inventory**: Increasingly convergent services must be delivered with inventory distributed across multiple sources with differing, non-standard data structures—UIM provides a unified view of inventory using a common, standard information model, without requiring the expense, time, and risk of inventory consolidation.

**Customer-centric inventory**: Next-generation services require customer-centric rather than network-centric views of inventory information—UIM fully enables a customer-centric view through inherent, standard support for customers, products, services, and resources.

**Accurate, consistent inventory information**: UIM provides trusted, consistent inventory information to key business processes that span engineering, IT, operations, and finance. Inventory accuracy is supported through UIM pre-integration with Oracle Communications Network Integrity product.

**Integrated workflow capability for business interaction and engineering work orders**: UIM supports a complete lifecycle and set of statuses for resources included in business interaction and engineering work orders.

**Enhanced usability**: UIM User Interface and functions are regularly enhanced, including support for ADF Framework, expanding trees, controlled user access, and more.

**Mature application**: Stable platform with support for high availability, clusters, latest multi-vendor technology platforms, etc.

**Business Insight from rich inventory information**: UIM provides open, standards-based access to its inventory data and integrates with Oracle Business Intelligence Enterprise Edition (OBIEE), to provide flexible, configurable inventory reporting capabilities to the numerous stakeholders.

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