

Portal 7.2 Implementation For WORLDSPACE SATELLITE RADIO



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Client

WorldSpace (NASDAQ: WRSP) is the world's only global media and entertainment company positioned to offer a satellite radio experience to consumers in more than 130 countries with five billion people, driving 300 million cars. WorldSpace delivers the latest tunes, trends, and information from around the world and around the corner. WorldSpace subscribers benefit from a unique combination of local programming, original WorldSpace content, and content from leading brands around the globe including the BBC, CNN, Virgin Radio UK, NDTV, and RFI. WorldSpace's satellites cover two-thirds of the globe with six beams. Each beam is capable of delivering up to 80 channels of high quality digital audio and multimedia programming directly to WorldSpace Satellite Radios anytime and virtually anywhere in its coverage area. WorldSpace is a pioneer of satellite-based digital radio services (DARS) and was instrumental in the development of the technology infrastructure used today by XM Satellite Radio.

Challenge

WorldSpace will use Portal's Revenue Management platform, Portal 7, to manage billing for all customer equipment purchases, activation fees, and monthly satellite radio subscription services. WorldSpace sought a billing solution that provided the flexibility and scalability to manage the company's global operations, which are expected to grow to more than 10 million subscribers over the next 10 years. The Portal solution will integrate with WorldSpace's SAP system to provide an integrated financial and Revenue Management solution to optimize profitability, maximize growth, and ensure customer satisfaction.

Solution

BrainRoots is the global Development & implementation partner for PORTAL 7 in associations with Siemens Information Systems Ltd (SISL). This project includes customized components like trouble ticketing & Workforce Management that are not part of Standard PORTAL product and includes a migration from existing WS legacy Subscriber Management System also. The combined Portal and SAP integration will enable WorldSpace to optimize its business processes and gain complete visibility across all financial and accounting functions.



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Implementation Details

PORTAL 7 Implementation includes following Functional Specification (FNS):

1. AUTH SERVER Interface

Development of World Space Authorization Server System and its interfaces with the Portal Infranet.

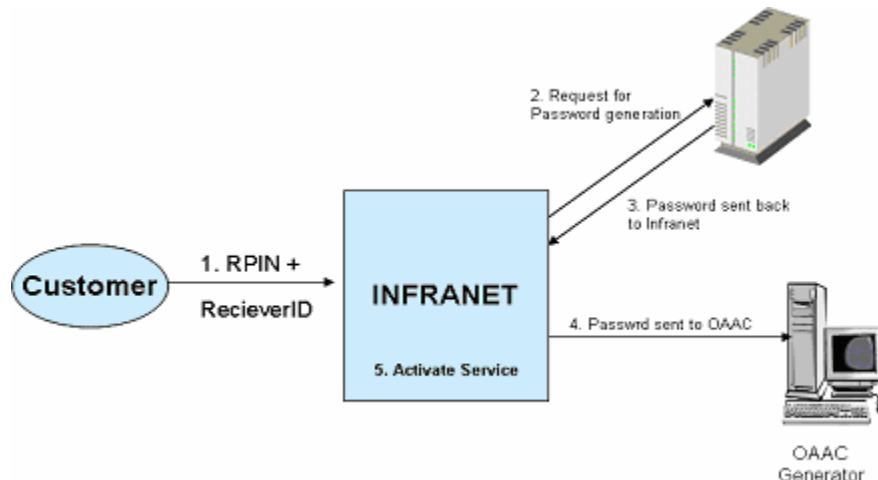
WorldSpace Satellite Radio Customer would contact (either on-line Or through Customer care) the Portal Server for Radio Service Activation. In that scenario, Satellite Radio Receiver needs to be activated by feeding a password. Authorization Server generates that password & Portal Infranet is used to request that password generation.

Functional Description:

The Customers who want to activate his WorldSpace satellite radio service calls the customer care (or does the activation on-line) and provides the following data to the Authorized Operators:

- RPIN. This is the unique PIN number, which identifies the package subscribed by the customer.
- Receiver ID, The identification number of the World space Receiver.

Once, the information is provided by the customer in Operator Workstation, the Operator workstation issues a request to the Portal Infranet and pass on this information. Infranet will issue a request to Authorization Server and pass on this information to it through TCP/IP socket connection. Authorization Server will generate a receiver Password which is only useful for the particular receiver id and send it back to Portal Infranet. The receiver password is also known as EUK [Extended User Key]. This is depicted in the following figure:



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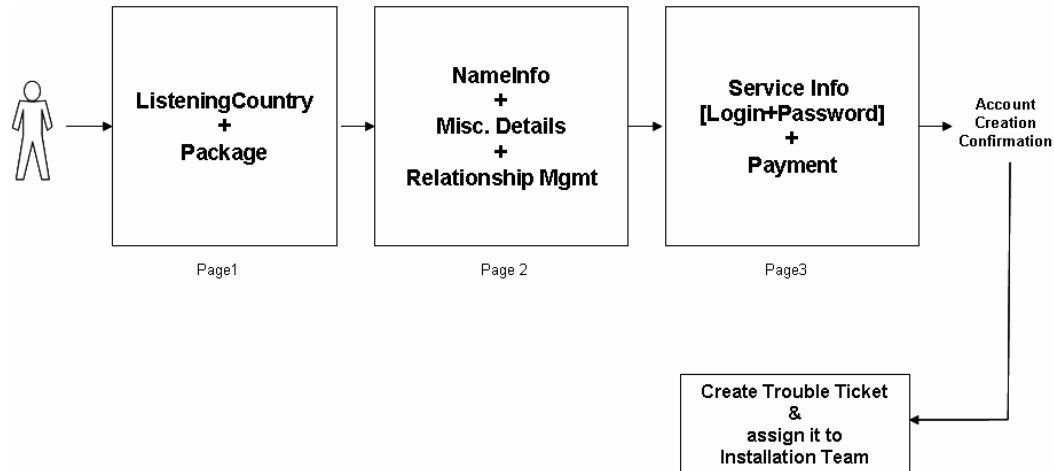
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2. Customer Registration

Development of Customer Registration process for WorldSpace and its interfaces with the Infranet.

2.1 CUSTOMER CREATION WITH RECEIVER & SUBSCRIPTION PURCHASE ONLINE

Below is the flow for web-page display while account creation in the case of Combo Package Purchase :-



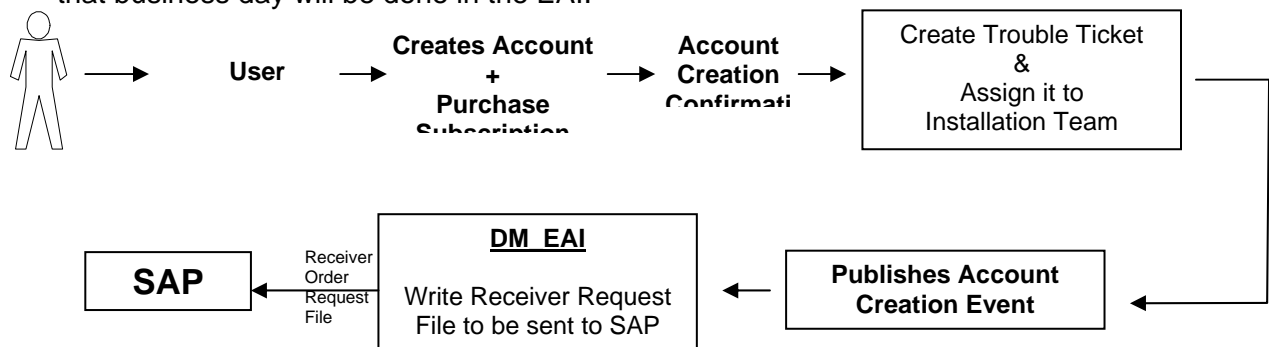
Voucher Creation

Each Voucher will have a field (**PIN_FLD_NAME**) that will correlate to the price plan, so whenever user selects a price-plan to be purchased, corresponding available voucher will be associated to that subscriber.

2.2 RECIEVER ORDER - REQUEST FILE TO SAP

After account is created, notification event will be published to EAI, which in turn will write the request to a request file.

Logic of separation of file based on date, i.e. single file for all accounts created in that business day will be done in the EAI.



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2.3 CUSTOMER CREATION WITH RECEIVER & SUBSCRIPTION PURCHASE (CSR/PSEUDO ONLINE)

2.4 SUBSCRIPTION PURCHASE ONLY / RENEWAL OF SERVICE

1. Customer visits the WS website for the purpose of service subscription purchase. User enters Receiver-id, RPIN and passes the request to Infranet.
2. If Receiver id exists and is allocated to account (i.e account exists), purchase the subscription by calling **XXX** opcode. RPIN get associated with the service and ticket for service activation is created.
3. If customer doesn't exist, customer enters all details on screen for account creation and purchase of subscription.

2.5 SERVICE ACTIVATION (OFFLINE)

Case where user buys subscription and once installation is done at his/her premises, technical support person request CSR to generate password and activate the service.

1. Once Tech Support request CSR to activate service.
2. Validation check is done that both Receiver Id and RPIN are valid and are allocated with same account. If yes, also check whether this RPIN is used for password generation earlier or not [based on state]. New State will be defined for it. Refer to Voucher Management document.
3. If both Receiver Id and RPIN are allocated with same account, user details are shown to Customer, that following Receiver Id and RPIN are associated with current account and do you want to activate the service?
4. After confirmation, call to **XXXX** opcode will be made for generation of password, and later activation.
5. Set the service state to **ACTIVE**
6. CSR will manually close the ticket.

2.6 SERVICE ACTIVATION (ON-LINE)

Case where user had already purchased **receiver+subscription**, and goes online to get his service activated.

1. User goes to website and enters his Receiver Id and RPIN
2. Validation check is done that both Receiver Id and RPIN are valid and are allocated with same account. If yes, also check whether this RPIN is used for password generation earlier or not [based on state]. New State will be defined for it. Refer to Voucher Management document.
3. If both Receiver Id and RPIN are allocated with same account, user details are shown to Customer, that following Receiver Id and RPIN are associated with current account and do you want to activate the service?
4. After confirmation, call to **XXXX** opcode will be made for generation of password, and later activation.
5. Set the service state to **ACTIVE**



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2.7 DISTRIBUTOR/DEALER ACCOUNT MANAGEMENT

Distributor and Dealer accounts will be created as normal accounts in Infranet. Difference between end-customers and dealer/distributor accounts will be on the basis of **CUSTOMER_TYPE**. Various type of CUSTOMER_TYPE are:

- **RETAIL**
- **CORPORATE**
- **DEALER**
- **DISTRIBUTOR**
- **DSA**

CSR will create distributor/dealer account using Customer Center tool. Based on the value entered, relevant value in **ACCOUNT_NO** will be stored in Infranet.

2.8 FRANCHISEE MANAGEMENT

Franchise Management System needs to be maintained based on PINCODE of customer, corresponding franchisee.

3. Voucher Management

Development of WorldSpace voucher management system and how it will be implemented using Infranet.

Voucher in Portal Infranet represents subscription and can be purchased by customers to avail the services provided by WorldSpace. It is also used for renewal of subscription service. In other words, every voucher generates some revenue for WorldSpace when purchased. So an effective system for lifecycle and inventory management of vouchers is essential. Infranet provides out-of-box (OOB) support for effective voucher management. OOB functionality of voucher management is based on the intrinsic Order management system that comes with Infranet. The status of every order is tracked by its life cycle management system and once an order is processed successfully, the inventory of voucher becomes ready for distribution. The inventory contains different types of vouchers based on the type of subscription. But vouchers are mainly segregated in two categories – one for online sales and other for offline (over-the-counter) sales. Online type vouchers are used for online subscription/renewal purpose and offline types are sold through distributor/dealer channel.

4. Receiver Management

It includes creation of Receivers and maintenance of their state in the Infranet System.

- 1) Creation of new Receiver:
- 2) Replacement of Receiver:
- 3) Receiver Order Request (Online) – File From Portal To Sap

There is the requirement that after selling the receivers to the distributors SAP will send the details of the distributed receivers in the ASCII file format to the Portal for the creation of receiver pool and for the maintenance of receiver state in the Portal, so that these receivers can be used while creating accounts.



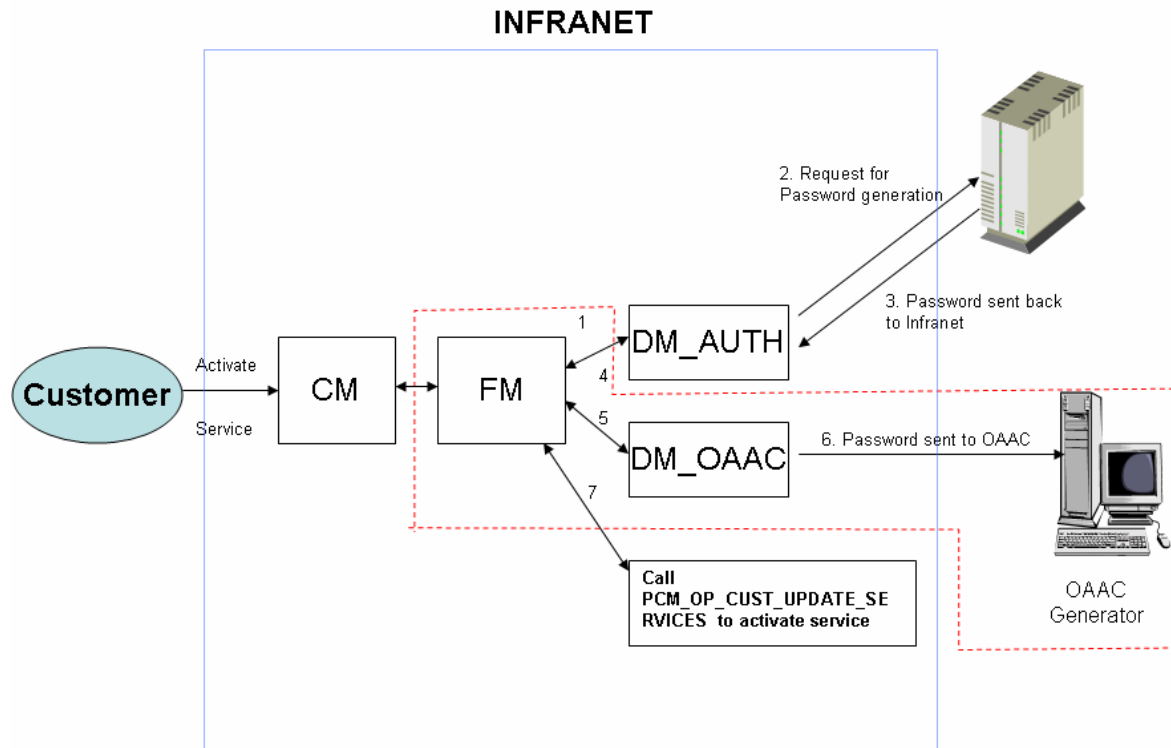
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5. OAAC (Over-the-Air Authorization Channel) System

This includes development of WorldSpace OAAC (Over-the-Air Authorization Channel) System and its interfaces with the Infranet. OAAC channel will be used to send password to receiver/end-user over the authorization, which will override the manual intervention, required for service activation.

At the time of purchase or at some later date, owners of OAAC receivers may wish to obtain access to one or more of the WorldSpace subscription service packages. They do this by placing a subscription service order that is sent to the Infranet for processing. Since the receiver is an OAAC receiver, the Infranet generates the necessary password thru AUTH server but, in this case, it is not sent to the user. Instead, it is sent directly to the receiver using the OAAC channel on the WorldSpace satellite.



6. Pricing System

The Pricing Center client tool of Infranet will be used for making the various plans, which are purchased by the end customer.

6.1 FIXED RATE PLANS WITH VALIDITY

- Multiple packages on the basis of number of days/months validity and a fixed price.
- Packages on the basis of specific channel or customer.
- **Usage based pricing-** Granularity into hours, minutes and seconds.
- A hybrid model with a fixed Fee and variable charges (e.g. fixed activation fee/ monthly rental followed by usage based pricing for Content).



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6.2 ADD ON PLANS

Once an account has been created, the customer can purchase add on plans that are not included at the time of account creation. These plans can be used for renewal. These plans contain a number of deals, which in turn contain various products. An add-on plan has its 'Type' attribute set to Add-On rather than new. The deals and Products associated with an Add-on plan is created in a similar manner.

6.3 LOYALTY POINTS

Loyalty points can be assigned to customers by treating it as a non-monetary resource and including it in various deals. The change in balance of this resource can occur at purchase, usage or rental event.

- Accrual of credits on usage
- Accrual of credits on renewal
- Accrual of bonus credits as part of promotion (acquisition, referral, renewal drive, birthdays, etc.)
- Accrual of bonus credits due to certain activities (Contests, events, etc.)
- Online redemption of credits against subscription months and tangibles like gift vouchers, event passes, etc.
- Credits/points should lapse after a time period (e.g. credits for the year to lapse at the end of the year) or in case of non-activity.

6.4 MEMBER GET MEMBER

A parent child relationship between the primary subscriber and the subscribers who are acquired by them is maintained. At the time of account creation, a referral/parent child relationship can be established between an existing account and the new account. The parent customer ID at the back-end is connected to children customer IDs. The parent subscriber would get certain credits/points once he acquires a child subscriber and every time his/her children renew. For activity like acquisition and renewals at each level of the chain the parent gets different credits/points. All these credits/points should be redeemed against subscription periods and other merchandise.

6.5 DISCOUNTS

- Price discounts on bouquets.
- Flexibility to charge premiums and provide subsidies on the basis of usage.

6.6 PROMOTIONS

- Flexibility to do price based promotions for data services
- Flexibility tweak any Element of the pricing namely fixed/ variable for specific time periods.
- Flexibility to have all models of pricing on the basis of Customer groups- so that specific promotions can be done for specific customer groups.



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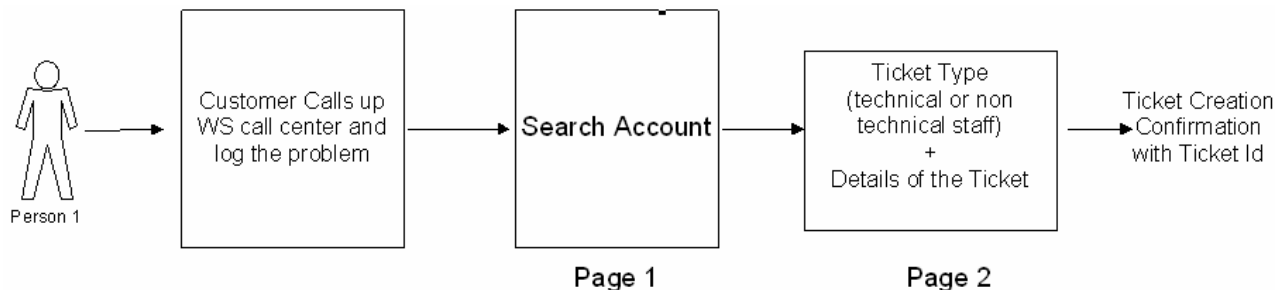
7. Trouble Ticket

It includes the creation and searching of trouble tickets that are raised in association with the particular account in Infranet.

Customer can make a call to the WorldSpace call center and explain his/her problem. Problem can be either technical or non technical like changing of address details, Call from WorldSpace Employee (non technical) or receiver installation, receiver is not accepting the password (technical). On the basis of the problem type CSR will open the ticket. Ticket tracking administrator will assign the ticket to the service staff to resolve this ticket.

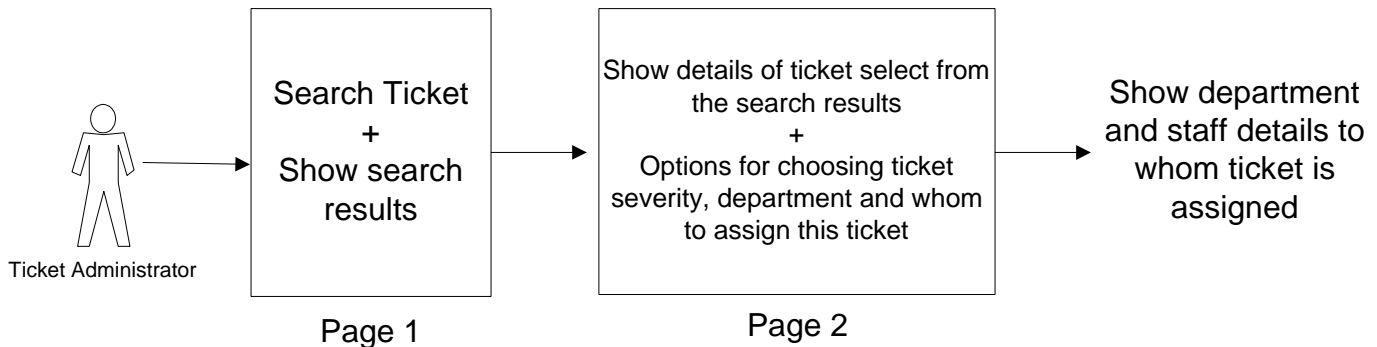
7.1 TICKET CREATION PROCESS

Below is the flow for web-page display to the CSR while ticket creation:



7.2 TICKET SEARCH PROCESS

Below is the flow for web-page display to the Ticket Administrator while ticket creation:



If Ticket Administrator has to search the assigned and not assigned tickets on the following fields for the search criteria: -

- 1) Ticket Status (unassigned, assigned, resolved, closed).
- 2) Number of tickets to be search.
- 3) Search on the basis of the date criteria.

If the status was unassigned this page will show the drop downs to select the department and the sub department who will handle the ticket, severity of ticket,



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name of the staff member to whom ticket can be assigned (owner of the ticket), details of the bosses of ticket's owner and also put the expected time for resolving the ticket.

If the status of the ticket was assigned, resolved, closed in that cases ticket administrator can view the details of the ticket.

8. WEBKIT

WEBKIT have to be customized for PORTAL implementation of WS project. There is the requirement for accessing self-care by subscribers and trouble-ticket by Franchisees and Customer Care.

9. E-Mail Notifications

In this, E-Mail Notifications to be sent to WS subscribers from PORTAL. There is the requirement that in case of e-mail notifications being sent to WS subscribers for order confirmation, welcome letter, renewal reminders etc.



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