# MOBILEWARE

## Billing Functionality

Operating a successful satellite business demand a comprehensive billing platform that can handle traffic data from different sources, apply rating and in the end invoicing. Unity offer the markets most advanced satellite billing environment being used by all major satellite operators as well as resellers.

The big difference from the other solutions on the market is that Unity are fully integrated with all the major satellite networks with API interfaces that offer real time operation end to end and not just plain CDR processing as competitors.

Unity offer integrated provisioning in real time as a standard functionality, convergent billing across all operator and reseller formats, highly advanced traffic monitoring - the direct integration into Iridium, Inmarsat, Thuraya, Orbcomm, Eutelsat, Intelsat.... allow monitoring and billing to be operated in a way that highly minimize unwanted charges, auto suspending at given trigger levels or performing data throttling using our POP manager or our satellite POP setup in Amsterdam, New York or Hong Kong.

The following will be listing some of the key billing functionalities to present a high level overview in capabilities:

### General Functionality

- CDR/UDR Collector - FTP / SFTP / API / Email / Drop zone
- Traffic CDR mediation across any format into Single View Event format (Unity format)
- Bill splitter (separate CDR files into new files based on content, size, IMSI ranges...
- Multi level rating - cost / reseller / end user (subscriber/company)
- Automated Revenue Assurance Reporting / Account Receivable
- Multi Currency / Multi Language / Billing Rule Handler
- Spending and Usage Monitoring - Operator, Reseller, Company, Subscriber, Package
- Invoicing (monthly, quarterly, yearly, mid period, forced...)
- Many Invoice templates - Template builder - Invoice Traffic Reports - Split Invoices..
- Tax handling - Contract handling - Order handling
- Billing rules, increment, minimum usage, minimum commitment
- Integrated prepaid and voucher system
- Highly flexibility to adapt easy to any special billing customization

### Fee Functionality

- Subscription type (Backward / Normal / Forward / Commitment / ETF / Fixed / Floating)
- Fee Periods (Monthly, Quarterly, Yearly, Biyearly, One time)
- Proportional fees for fixed period or floating for quarterly or yearly plans
- Standard One Time fees for easy injection
- Internal Fee generation for Subscription, Activation, Disconnect, Suspend, Resume, Hibernate..
- Recurring fee generation for any type of value added like Static IP, web acceleration..
- Informative event (fees) for any customer action like updating monitoring
- Injection of any type of customized fee with free text

### Packages

- Basically any type of products offered across satellite network operators today
- Postpaid, Prepaid, SCAP, Group, Pool plans...
- Inmarsat I4 ( BGAN, GSPS, LINK, M2M, SBB, FBB, IDP..)
- Inmarsat GX ( Aero Business, Aero Commercial, Enterprise, Government, Maritime)
- Iridium (Postpaid, Prepaid, SBD, GDB, Openport, PTT, complete Certus range..)
- Intelsat Flex / Thuraya / SES / Eutelsat / Orbcomm / Viasat / KVH ...
- All major Reseller ( Marlink, Singtel, Airbus, NetworkInv, AST, GobalBeam...)
- Package associated rating can be manipulated under activation
- Packages can be bundled with a swift range of services that can be billed where needed
- All packages will be mapped to templates and these can again be mapped to multiple rating plans
- Applying a new package to a terminal of sim card are performed through our product catalogue
- Auto generate a price catalogue / sales catalogue combining product catalogue and rating plans

# MOBILEWARE

## Allowance & Money Bundle

- Full support for any combination of allowance & bundle services
- Multi level group handling with group in groups
- Allowance plans can be managed in service groups like Data, Voice, Streaming, Messaging…
- Any Allowance group can to a fine degree be managed adding or removing associated services
- Money bundle can like with Usage Allowance be managed across dedicated services
- Group / SCAP associated allowance and money bundle managed in group masters
- Allowance and Spending billing &monitoring associated notifications - allowance used 75%, 100%..
- Pool plans external or internal - sharing pools of units, usage or spending across package types

## Dialing Plan / Event Plan / Zone Billing

- Dialing plans managing mapping between dialed number and charge event type
- Add / Remove any dedicated dialing events and manage directly associated text like 'Support'..
- Dialing plan mapping basically all mobile operators, PSTN numbers, Satellite numbers etc..
- Event Plan map between CDR service tag / streaming speed … to custom events like ISDN, FAX..
- Event Plan handle mapping between bandwidth dependent services checking uplink and downlink
- Event plan is where new billing CDR formats get defined combined with our CDR mediation wizard
- Zone billing based on dialed number location and dialed location (ISO2 / ISO3)

## Collector / Mediation / CDR formats

- Collector functionality handle collect + file validation process + archive
- Collector processes work in parallel mode to allow system to scale unlimited
- Collector collect from SFTP / FTP / Email / Drag & Drop / Auto De-compress
- Mediation have integrated bill splitter to allow file data separation
- Mediation convert collected to internal event format made ready for rating
- Unity mediate as standard almost all current satellite CDR formats – more than 120 formats
- Inmarsat I4, Inmarsat I5, GX VoIP, Iridium, Thuraya, Eutelsat, Orbcomm, Intelsat, IPstar, SES, KVH..
- Reseller formats – Basically any reseller format across all Iridium, Inmarsat.. partners
- General formats - ASN1, Tap2, NTap2, Tab limited, CSV based, Single View, BSCS…
- Unity have integrated mediation wizard that allow new CDR formats to be added with drag & drop

## Rating Plans - Handling Made Easy

- Rating plans manage all rating associated data - any product will map to at least one rating plan
- Rating plans for a product can have customer specific rating plan lines different from default
- Web based rating plan management - mainly to be used for minor corrections and lookup
- Rating plan cloning - very effective and fast way to build new rating plans
- Rating plan drag & drop interface for building new rating plans in Excel
- Rating plan management using Database tool that support tunneling for secure access
- Build dedicated rating plans for Partner, Company, Subscriber, Sim card..
- Rating plan ID and Product ID is the unique link - these can be text based like IRD10223 etc..
- Automated rating plan loading based on dates like 01 JAN 2022
- Terminals and Sim cards support deferred migration as an alternative to new rating plan
- Revenue Assurance offer highly transparency across rating plans and added prices

## Tax Handling & Currency Handling

- Handle any type of tax handling for invoices
- Tax API integration into major Tax lookup platforms - USA, Japan…
- Tax part are fully integrated into invoice handling
- Tax Accounting report covering all tax

## Advanced Rating

- Perform Rating based on mediated data - event based (single view)
- Multi Level rating Operator cost, Partner cost, End user cost..
- Rate units, time, bytes (GB, MB, KB), workflow based, rule based..
- Group rating (SCAP, Grand SCAP, Groups, Flexible Group Logic, Pools)
- Allowance rating across Streaming, Data, Voice, Messaging, Actions..
- Manage IN BAND / OUT BAND rating for allowance / money bundle
- Each service is separated into an Event that identify service
- Each event has billing rules like minimum usage, minimum increment…
- Any workflow across provisioning will generate a possible billable event
- Migration - Upgrade & Downgrade managed linked to product ranking

# MOBILEWARE

- Associated Downgrade billing will be managed linked to commitment

## Billing User Structure Supported

- Unity are fully integrated across provisioning API's into Iridium, Inmarsat…
- User structure able to run in completely decoupled mode from satellite networks
- Standard User structure Operator staff, Partners, Companies, Subscribers/Vessels/Airplanes…
- Basically any level can be billed, invoiced - in any combination preventing doublet billing
- Underlying user structures in satellite networks are automatically maintained by Unity
- Swift range of user type can be added Financial controllers, Key Managers, Alias accounts…
- Any level of users can gain direct access to real time billing, usage & spending views..

## Invoicing / Invoice Templates

- Invoices in any format based on easy to build Invoice templates
- Multi language, Multi Currency, Multi Bank Accounts. Logos
- Email delivery, Portal delivery, Invoice Print Manager, Print House interfaces
- Overview invoices with associated detailed invoice reports
- Credit notes as an integrated setup
- Invoice customer tagging linked to Invoice print groups
- Generate invoices whenever wanted like mid period
- Billing period handling to manage where CDR data get placed
- Deep intelligent currency handling if rating are done in example USD
- Multi Level invoicing across Partners, Companies, Subscribers…
- Integration to a lot of the European Government Electronic interfaces EHF, SIRET..

## Traffic Presentation / CDR Rerating / Failed CDR Reprocessing

- Traffic are displayed in real time across any level accessing Unity
- Traffic  presented in a hierarki allowing easy and simple traffic drill down
- Access raw CDR files, access mediated CDR data containing the raw data, access rated traffic
- Failed CDR's are presented with reason / overview report allow CDR failure overview
- Failed Traffic CDR reprocessing that step by step present process to track down potential issues
- Traffic CDR reprocessing (rerating) – that manage quarterly, groups, years rerating
- Unity track any historical billing linked to package swap, sim swap, number swap..
- Package swap, migration, billing related changes are all tracked historically
- Service Orders linked to any given action can be displayed historically and advanced search offered
- Any level of users can access own related traffic data under billing menu

## Prepaid / Voucher Topup / Rental

- Unity have a complete integrated Prepaid system that allow any product to be sold as prepaid
- Internal Voucher system that allow internal vouchers to be used for topup
- The internal Prepaid system integrate directly with under laying prepaid systems
- Inmarsat prepaid integration to their two Prepaid API's to allow provisioning and topup handling
- Iridium prepaid integration to allow provisioning, topup with units or time
- Real time synchronization with remote valets – integrated valet notification linked to billing levels
- Manage rental equipment and associated airtime – add tags to used rental time

## Financial Integration / Financial Reporting

- Unity will do cost reports to allow account compare from providers
- Financial output files - Output for credit card payment houses..
- Directly API integrated to major platforms - SAP, BAN, BSCS, Navision..
- Easy adaptive output formats for customized integration

## Billing in Frontend & Operator Dashboard

- Two GUI environments linked to required high security ISO27001
- Frontend for standard daily end to end operations / incl. customer self care
- Operator Dashboard to manage rating plans, reports, event plans, dialing plans..
- GUI environment are all based on responsive design, bootstrap templates..
- Multi level login - interfaces automatically adapt to user level, to content, to states..
- Access billing / traffic in real time - Unity process any traffic in real time
- Manage a swift range of instant traffic and spending monitoring
- Multi language Notifications based on templates that support simple scripting and HTML

# MOBILEWARE

- All fully web based - no applications to maintain and no legacy systems like Windows..
- Multiple Frontend setup to allow dedicated project integration or partner setup

## Billing CDR Output / API integration

- Unity are delivered with the only API on the market that can access all major Satellite Network
- Integrate internal platforms to satellite provisioning in a simple and easy manner
- Integrate own financial systems or own portal systems directly with our billing environment
- API development / integration made easy and simple through complete Postman Payload / Swagger
- Unity CDR output is one of the most used in the satellite market today - CSV based (basic, advanced..)
- Our format is used by ex. Airbus, AST, Boeing, Honeywell, Singtel, KDDI, Satcom Direct, Speedcast…
- Partner can get CDR feed in real time through API or through drop zone

## Billing & Security

- Unity Platform are built with security as a key functionality linked to many high profile customers
- Architecture are built to ensure security across any part of the implementation
- SSL across any interface hereunder API interfaces - all with public certificates
- Hashed Salted Token across Authentication - with integrated Auto banning
- Environments get periodically scanned with own OWASP + HP Fortify scanning
- Database environment all operating in Encrypted mode based on TDE
- No files or No data stored on Frontend environments (Internet facing)
- All environments are ISO27001 military grade certified + 24/7 guards
- Connectivity fully redundant with BGP failover - replicated power sources..
- All internal staff undergo yearly security certification at Comptia

## Billing Platform Architecture

- Unity can be operated in the cloud as well as in a local installation
- Fully redundant architecture across backend, frontend, operator dashboard and database
- Database using three nodes in a replicated looped mode - MariaDB
- Database operated in Encrypted mode using TDE Encryption for security
- All internal server to server connectivity done through Secure API connections w SSL
- Backend running in full failover mode
- Multiple Frontends to support scalability to any degree
- All communication including web access is stateless to allow any scalability needed
- All delivered on Enterprise Java, Unix - using the best in the open source world
- No black box delivered - Operator get direct access to database environment

## Highly User Friendly Implementation

- Satellite Business has never been super easy and simple – Unity do Make Connectivity Easy
- Highly Intuitive User interfaces that automatically adapt to situation and products
- All interface across the environment try to use the same layout across search, export..
- Integrated help where possible, integrated data validation in the different fields
- Very high level of documentation across all parts from architecture, installation, user manuals…
- Demo & Training samples across all – Integrated sample for bulk loading..

## Billing Software Development and Testing

- Unity are developed using Agile Development process - GitLab + Spring framework  - Larvel
- All part of our development is isolated into functional modules that make reuse simple
- Unity keep getting better - we constantly adapt new satellite API interfaces when they are launched
- Sample API change is when Inmarsat changed from Inmarsat GX Cisco to SDD with Infosys
- Unity are normally offering two major software releases in a year - and minor bug fixes in between
- Software releases go through 3 step launch process after being releases and have done internal test
- Stage 1 - Test platform connected to satellite network operators test environment (Inmarsat, Iridium)
- Stage 2 - Test platform with real live inventory connected to network operators live interfaces
- Stage 3 - Loading new software release on production environment after all testing done on stage 2

# MOBILEWARE

## Solid and well proven Platform

Performed satellite billing in more than 20 years across Inmarsat, Iridium, Thuraya, KVH, SES..
Customer references like Thales, AST Group, Speedcast, Singtel, Airbus Defense, Network Innovation, Boeing, Honeywell, Globecomm, Cobham, Globe Wireless, Telespazio, L3Harris, GlobalBeam, ESL, NSSL, Station711, GoGo, Arinc, Sita, Satcom1, Teleserve, Polaris, Orange, Telefonica, KDDI, AddValue, Japan Digital Communication, Proximus, Satcom Direct, Sait Communication, Navtech, Nato… The list speak for the quality delivered!

## Complete Satellite Business Environment

As the only provider on the current satellite market do we deliver any needed business functionality needed to run and operate a successful operator. Unity is fully integrated into an Satellite Network Operator systems  offering advanced billing and monitoring capabilities. Meaning a single platform to perform provisioning (no third party web interfaces), a single billing platform outputting a single Invoice, uniform monitoring across basically any service offered by the operator. Unity contain modules like B2B Portal, Support environment, Sales order process module etc.

Mobileware offer a long range of other satellite products enabling us to deliver a complete end to end business product for the satellite operator - Our POP environment for New York, Amsterdam or Hong Kong is today the most inexpensive POP for Inmarsat I4, I5 offering Radius authentication + terminal firewall capability - same can be used for Iridium, Thuraya, Intelsat, Eutelsat and 4G with routing offering satellite terminal firewall functionality with full self-care. Our POP environment come with a range of value added service components like web acceleration.

Unitgate provide big data collection from satellite equipment like Inmarsat GX assurance metrics – 88 terminal specific metric values collected every 5 min across basically all container ships as well as most of the airplane all added to Elasticsearch that integrate directly with Unity for presentation and data processing. Unitgate is today the biggest data collector for GX across airplanes from Honeywell, Satcom Direct, Satcom1, GoGo, Arinc, Boeing, Site, L3Harris.. As well as the biggest data collector across vessel through Navarino, Speedcast..

Our latest satellite product is a complete M2M portal environment that offer integrated Apache Cassandra for data grapping, satellite MQTT gateway with integrated provisioning API that interface to Unity. The gateway integrate to all the many M2M API interface like Inmarsat M2MAPI to handle M2M terminals across software update, remote management, tracking…

If the needed billing capability isn't available then do we typically implement it!