RUDICS Overview

Product Information for Iridium Partners

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Read and understand the Iridium User Manual and the safety warnings and information contained in that Manual before using any Iridium product.

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Agenda

- RUDICS Definition
  - Service Description
  - Key Product Benefits
  - Required Hardware
  - Interface Types
- RUDICS Offering
  - What Does RUDICS Offer?
  - RUDICS Can Meet Your Requirements
  - RUDICS Applications
- RUDICS Set-up
  - Set-up and Provisioning
  - FAQs

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DEFINING RUDICS

RUDICS Service Description

Router-based

Unrestricted

Digital

Information

Connectivity

Solution

RUDICS Service Description

What is it?

- Data service that allows customers to transfer data via Mobile Originated (MO) and Mobile Terminated (MT) circuit switched data connectivity.

How Does it work?

- Uses circuit switching technology (similar placing a phone call) via a dial-up modem & ISDN for low-bandwidth data transfer, to enable a host application to originate and terminate numerous connections simultaneously.

What are the components?

- Data host
- Iridium Subscriber Unit (ISU) - handset or LBT
- Device interface to Iridium Network (field device)

Who is it intended for?

- Customers who use circuit switched data.

RUDICS Key Benefits

SECURITY

- Only group members are allowed to connect
- Device must call the special "group" number assigned for RUDICS customers
- The MSISDN of the calling unit is validated before access is granted
- Reduces the need for username/password verification

SPEED

- Faster Data Set-up Time
- Approximately 25 to 30 seconds for ISU-PSTN or ISU-ISU circuit switched data
- Approximately 9 to 13 seconds for RUDICS (end to end)

EFFICIENCY

- Most efficient CSD connection across the Iridium Network with quality, reliability and maximized data throughput
- Eliminates analog modem training time, because it's like placing a phone call
- Lowers call costs

FLEXIBILITY

- Protocol independent
- No Operating System requirements
- No TCP/IP requirements

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RUDICS – Required Hardware

Each of the following hardware supports RUDICS service:

HANDSETS

- 9500
- 9505
- 9505A
- 9555
- Iridium Extreme™

L-BAND TRANSCEIVERS

- 9522
- 9522A
- 9522B
- 9523

LBT BASED PARTNER PRODUCTS

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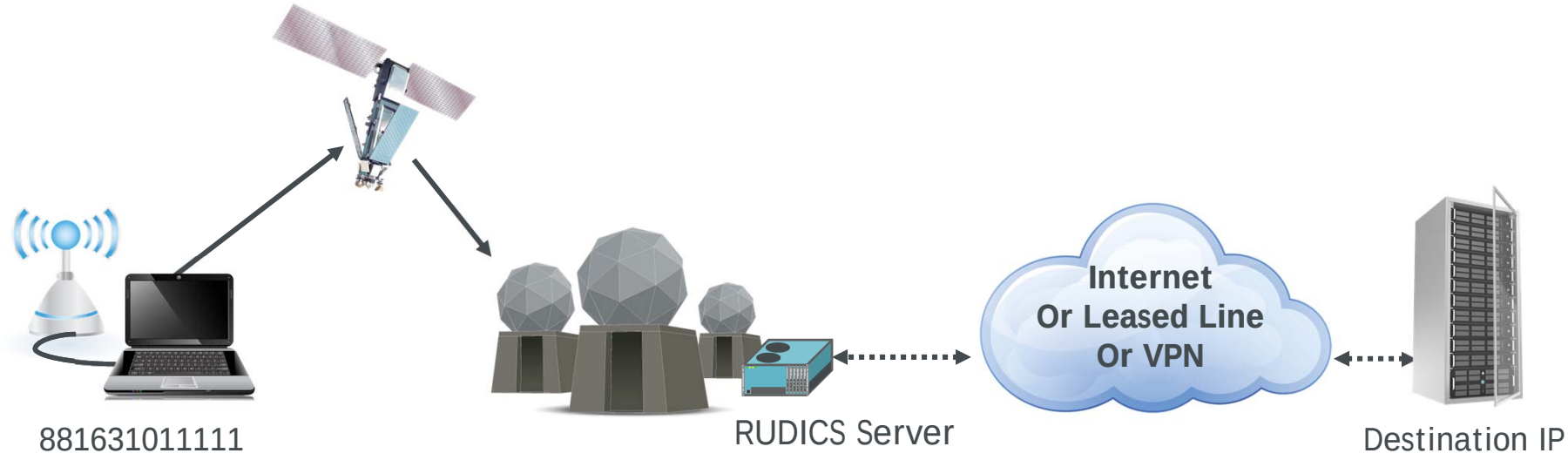
RUDICS Interface Types

- There are three types of RUDICS interface calls: Standard (MO), Point to Point Protocol (MO) and Mobile Terminated.
  - These interface types define how the service is connected to the Iridium gateway and is delivered to the end user.
  - MO – calls are initiated from ISU and routed to the server
  - MT – allows customers to access the server to connect to an ISU

Call Type	Description	Use
Standard (STD)	Data session that is opened between ISU & customer's server. Initiates IP connection to complete call	Initiate a call from ISU
Point to Point Protocol (PPP)	Data session establishing a dial-up modem connection to the Internet or VPN	Initiate call over the Internet
Mobile Terminated (MT)	Allows customers to utilize access server modems to establish data session to ISU	Receive a call to ISU

RUDICS Standard Example (MO) – Initiate a call



Group: TEST_STD
DNIS: 88160000999
Destination IP: 12.12.12.10 port 1250
Members (CLID):
881631011111
881631022222
881631033333
881631044444
881631055555

Steps to Initiate a Standard RUDICS call:

1. Group/Type of call is defined in the RUDICS server
2. Call is placed from ISU, using DNIS and CLID
3. Call is received by the Iridium satellite and routes to the Gateway
4. Switch passes CLID and DNIS to RUDICS server
5. RUDICS server matches CLID against DNIS
   - If no match, the call fails
6. If Matched, connection is routed to Destination IP on assigned port

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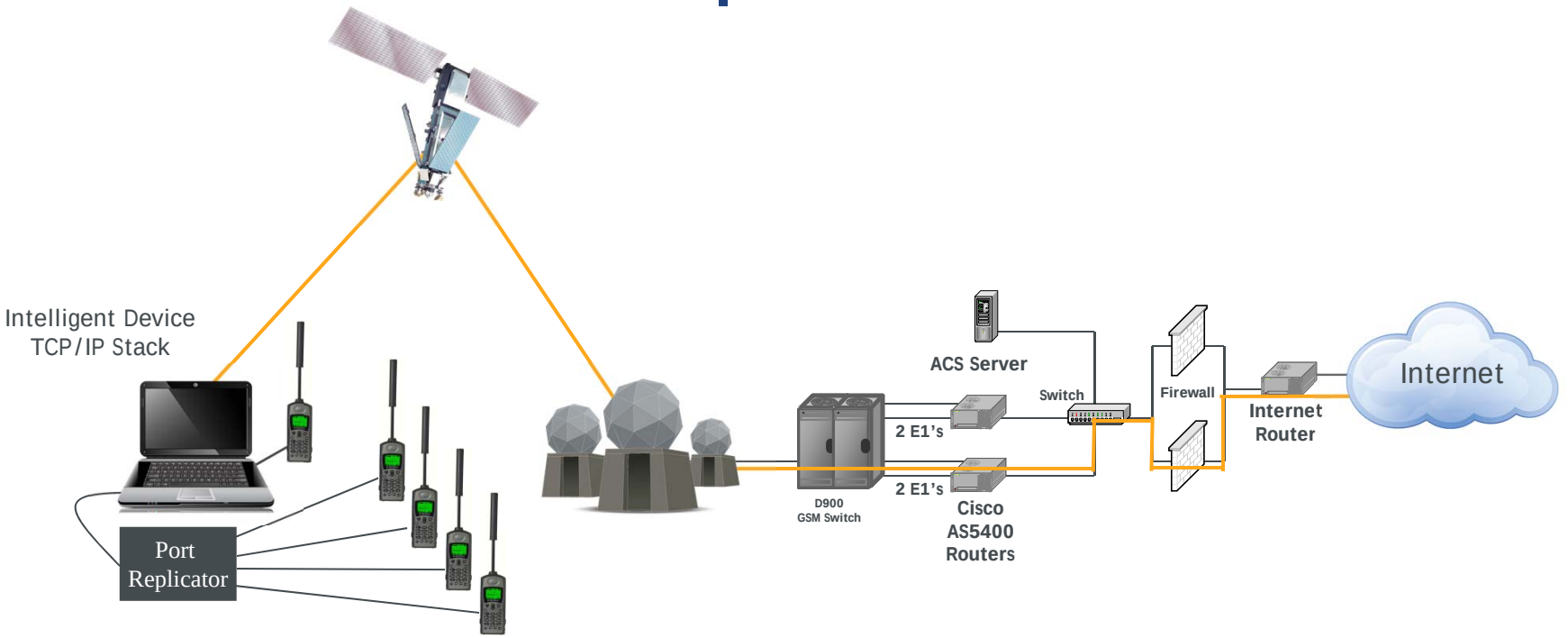
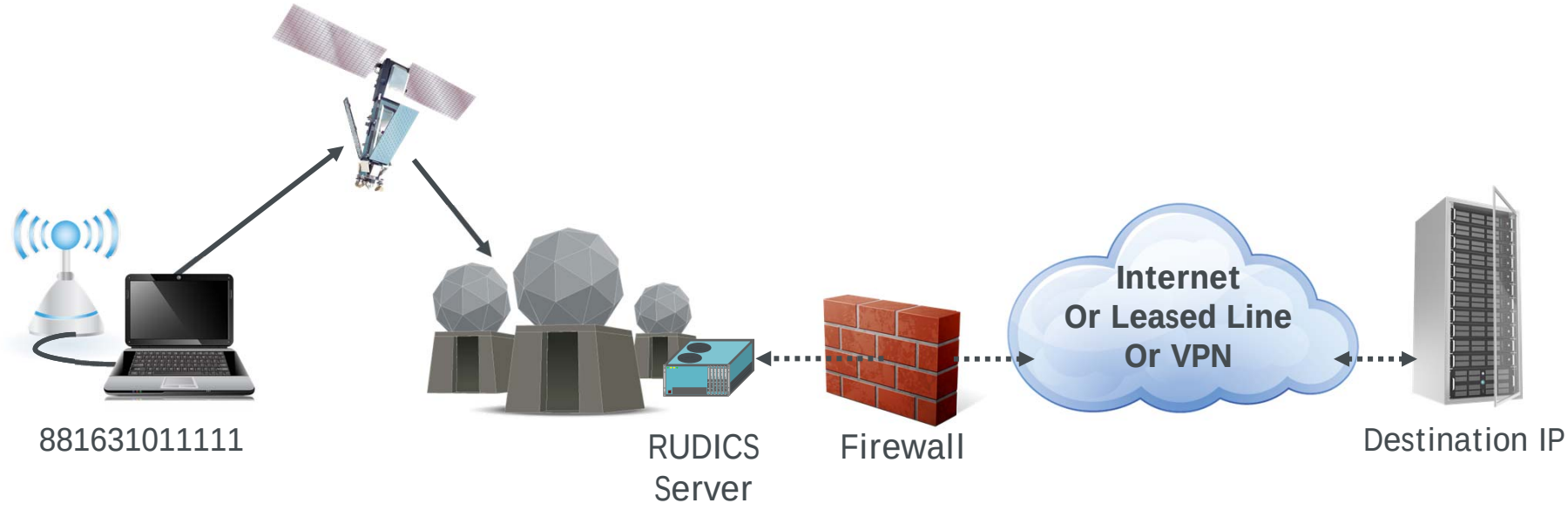
RUDICS PPP/MLPPP Example – Initiate a call



Steps to Initiate a PPP RUDICS call:

1. Same as the Standard Call, with the exception that PPP is used for dial-up to allow the connection to be made via the Internet
2. Can use more than one ISU the physical links are bounded, providing a single virtual link with greater bandwidth to the Internet

RUDICS Mobile Terminated (MT) Example – Receiving a call



Group: TEST_STD
DNIS: 88160000999
Originating IP: 12.12.12.10
Members (CLID):
881631011111
881631022222
881631033333
881631044444
881631055555

Steps to Receive a Standard RUDICS call:

1. Host server with Originating IP establishes telnet session to router
2. Group/Type of call is defined in the RUDICS server
3. Firewall matches Source and Destination IP address against Access Control List
4. Valid combination allowed to place call

RUDICS OFFERING

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What Does RUDICS Offer?

- Iridium's RUDICS service offers customers who have requirements for large data transfers, reliable, affordable, and multi-protocol connectivity to the Iridium Network.
  - Iridium circuit switched data service
  - Provides the opportunity to develop a custom solution on the Iridium network
  - Send and collect information between a host server and multiple remote units
  - Requires a central data host, Iridium subscriber equipment and Partner interface to the Iridium network.

RUDICS Can Meet Your Requirements

- RUDICS service is designed to be incorporated into an integrated data solution. RUDICS meets data service requirements for applications requiring:
  1. Larger data transfers of up to 2.4kbps, requiring immediate interface into the Iridium Network
  2. Solutions that deploy many remote units that report to a central host application
     - For remote devices that require TCP/IP, then use RUDICS PPP call type
     - For remote devices that are protocol agnostic, then use RUDICS STD call type
  3. Applications that require feedback from the host server

RUDICS Applications

- The following real life examples show how RUDICS is used to meet specific application requirements:

Application	How is it integrated?
Gas well flow meter monitoring	RUDICS is used to transfer data from remotely located gas wells to collect and store that data at a central server for monitoring and analysis
Wind farm monitoring	RUDICS is used to collect data from each wind energy device, which is then sent to a central server
Aircraft data collection	RUDICS collects and transfers essential data from aircraft to a central server
Weather monitoring	Tsunami warning systems and other environmental data collection with data collected from deployed buoys and sea gliders and transferred to a central server
Two-way email service	
Troop welfare	including email, SMS, news download and letter-home services
Out-of-band access	to VSAT units for maintenance and troubleshooting

RUDICS SET-UP

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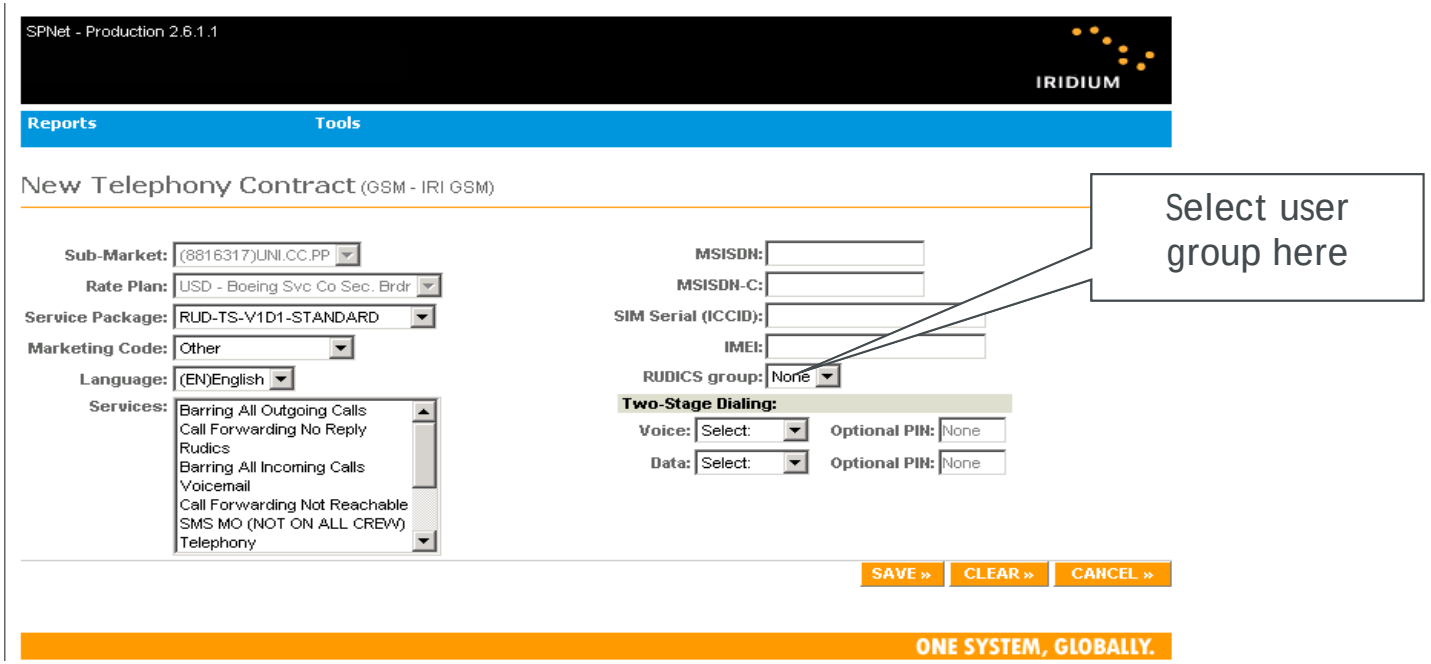
RUDICS Partner Set-up

1. Partner receives RUDICS Data Configuration Form from their Iridium Account Manager
2. Partner completes form and submits to their Account Manager along with the RUDICS purchase order (PO)
   - VAR fills out form according to the type of RUDICS connection they want to setup
     - If doing a RUDICS standard connection, must specify if MT connections will be made.
     - If calling MT, must provide originating IP address
3. Once the form and PO is received the Account Manager opens an OC&C (Other credits and charges) request.
4. The Account Manager opens a system request which includes all three forms.
   - Form submitted to Finance and then network engineering and then to IT Apps
     - Group is set up in router
     - DNIS (dial-in number assigned)
     - Group added to SPNet
   - Demo account also available at no additional cost
     - Demo group set up for testing and development
     - Only demo SIM cards can be used in demo RUDICS account

RUDICS Provisioning

- In SPNet
  - Must select a service package with RUDICS
  - Must select RUDICS group name
- Limitation
  - **Prepaid SIM card cannot be used with RUDICS**



RUDICS FAQs

- What does RUDICS do? Method for terminating & originating circuit switched calls via the Iridium system. It provides three types of connectivity to the gateway. It is designed for data applications with many remote units that contact the central host to download/upload data.
- What's RUDICS data transfer rate? Up to 2.4 kbps
- How does a partner get set up with RUDICS? Account Manager fills out RUDICS VAR Set up/Maintenance Form. The form is distributed to IT Applications & IT Operations
- How much does RUDICS cost? RUDICS Partner pricing is outlined in your Iridium agreement.
- What are the differences between the RUDICS & SBD? RUDICS and SBD are two different services; They are not add-on services, but rather complementary to each other. SBD is a network protocol service for shorter data messages, while RUDICS is a circuit switched data service designed to be included into an integrated data solution.
- Does RUDICS require a handset or LBT? Yes, one or the other.
- What applications are best suited for RUDICS? Applications requiring larger data file transfer, such as:
  - File transfer from remote locations that can be used to provide collection of data to a central server
  - Two-way email service
  - Troop welfare including email, SMS, news download and letter-home services
  - Out-of-band access to VSAT units for maintenance and troubleshooting

THANK YOU FOR YOUR TIME!

ANY QUESTIONS?

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