



Iridium RUDICS Basic Trouble Shooting Guide

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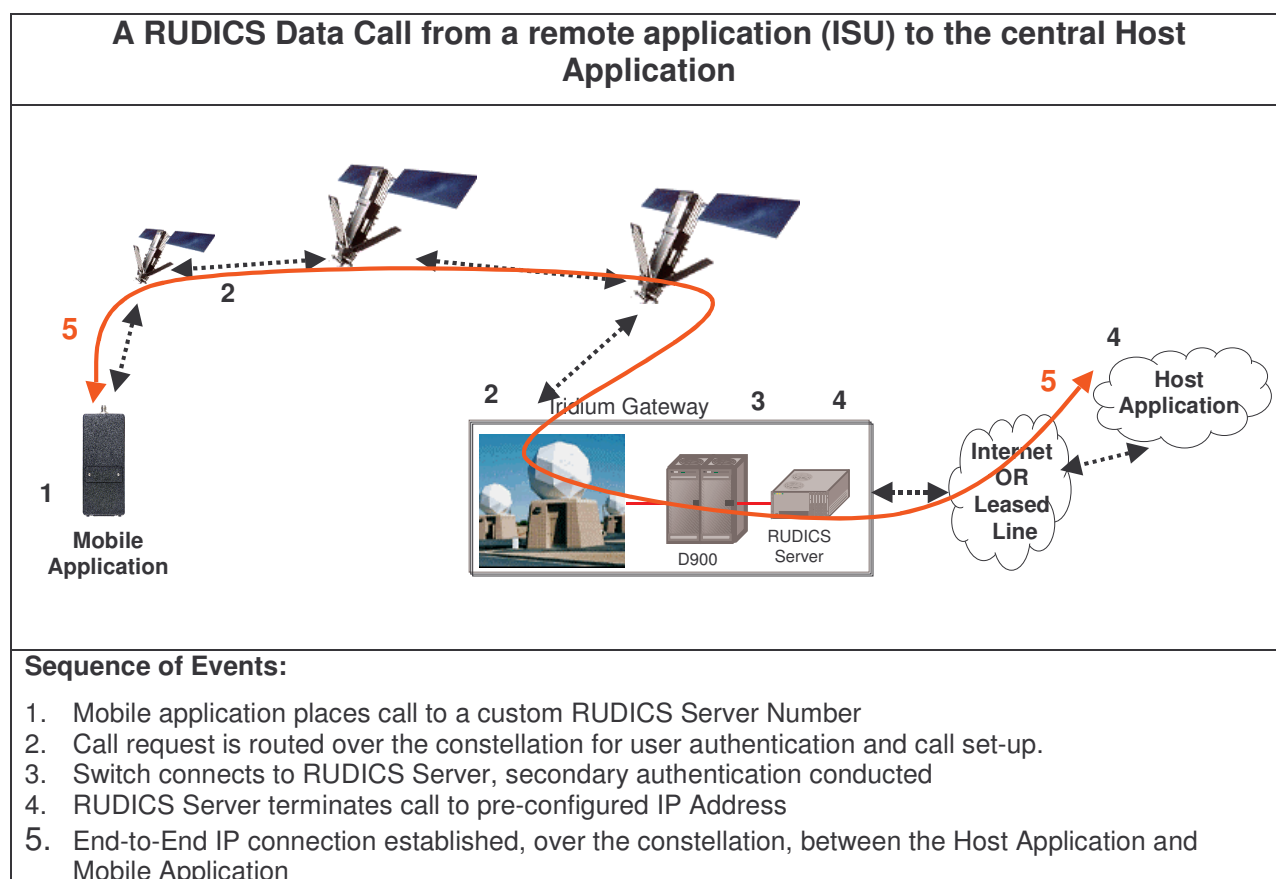
1.0 Service Description

Router-Based Unrestricted Digital Interworking Connectivity Solution (“RUDICS”) is a value added data service that Iridium offers through its network of Value Added Resellers (VARs). RUDICS is an enhanced Gateway termination and origination capability for circuit switched data calls across the Iridium satellite network. RUDICS offers an optimized data connection service for various end to end data applications or solutions.

There are four key benefits of using RUDICS as part of a data solution over conventional PSTN circuit switched data connectivity or mobile-to-mobile data solutions:

- 1) Elimination of analog modem training time.
- 2) Increased call connection quality, reliability, and maximized throughput.
- 3) Protocol independence.
- 4) Both Mobile Originated and Mobile Terminated calls are rated at the same rate.

The basic architecture is illustrated in the diagram below.



Remote applications use AT Commands to control a circuit switched data capable Iridium Subscriber Unit (ISU). The remote application dials a customer specific Iridium number, which connects the call through the Siemens D900 telephony switch, to the RUDICS server. The customer specific number is assigned and provisioned by Iridium. Each ISU is authenticated using Calling Line Identification for the RUDICS customer specific number that it dialed. Once authenticated the call is routed over the terrestrial connection to a pre-configured Internet Protocol (IP) address and Port at the Value Added Reseller's location. The IP address and Port is the Value Added Reseller's host application server. The RUDICS service will support the follow service transport types: TCP/IP encapsulation, PPP, and MLPP.

The Host application can make a Mobile Terminated call by opening a Telnet session to the RUDICS server. Once authenticated, a series of AT Commands are used to connect to the remote ISU and establish a circuit switched data call. Mobile Terminated access must specifically be requested at the time of the initial configuration and set up.

Connectivity between the Iridium Gateway and the VAR Host Server can be via a number of options, including:

- Internet
- Internet with Virtual Private Network
- Private leased line such as:
 - Frame Relay
 - T1/E1 Leased Line

Additionally, the RUDICS capability offers the capability for Multi-Link Point to Point Protocol (MLPPP). This is where multiple ISU's can be used to send data simultaneously and the data can be delivered in an N x 2400 bps PPP connection.

2.0 Support & Trouble Shooting

2.1 VAR Tier 1 Expectations for Support

The VAR is the first point of contact for end user customers experiencing difficulty in using the RUDICS system. The VAR is responsible for ensuring that the end user's remote application is interacting properly with the ISU prior to contacting Iridium. The VAR is also responsible for ensuring that the end user's host application is operating correctly. It is also the responsibility of the VAR to determine the best process for doing this, based upon the specific end user application.

2.2 Document Scope and Purpose

The purpose of this guide is to offer basic troubleshooting for VARs who have commercially deployed a solution utilizing RUDICS. This is NOT intended to be used as a guide for the integration of a device or application as these are the responsibility of the VAR.

2.3 Additional Resources (available on Iridium's VAM extranet)

- ISU AT Command Reference Document
- 9522 L-Band Transceiver Fact Sheet
- RUDICS and VAR Interface Description

2.4 Troubleshooting Strategy

Essentially, issues that arise with subscribers on the RUDICS system should be addressed in the same way that any data call over Iridium is addressed. Basic troubleshooting steps, such as checking provisioning, line of sight, configuration and power should be addressed prior to contacting Iridium's Data Support Team.

- Verify that the MSISDN is provisioned for RUDICS
 - Note that if the MSISDN is not specifically provisioned for RUDICS number being called, there is no way that MSISDN can utilize the service as RUDICS is designed to drop all calls from MSISDNs not specifically provisioned for that number.
- Has the system successfully worked in the production environment?
 - The answer to this should be "yes." When Iridium brings a new RUDICS customer on-line into the production environment, extensive testing is conducted to verify that the system works end-to-end. If the answer is no, please contact Data Support.
 - When was the last time contact was made with the unit? Were there any anomalies in the last connection?

- Have there been any known environmental changes in the area where the unit is located (i.e. installation of other equipment or high winds that may have impacted the antenna's line of sight to the sky)?
- Do you have other units set up on RUDICS? Are they working properly? Do they share the same configuration as the unit in question?
- If the system is set up to accept mobile terminated calls, have you been able to connect to the unit in that manner?
- If the unit is in a location where someone can do on-site troubleshooting, please conduct the following:
 - § Check to make sure that there have been no changes to the configuration such as username/password and number dialed (accessing this will vary based on the application being utilized. In a basic RUDICS configuration, connections are set up as a standard Dial-Up Networking connection) Iridium has no insight into specialized applications so it is the VAR's responsibility to verify that the configuration is correct

2.5 Data Support Contact Information

- Telephone: 1.480.752.5100 (option 2)
- Email: datasupport@iridium.com