Remote Terminal Manager

remote communication to the next level

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Galaxy 1 Communications

Background *Remote Terminal Manager (1)*

- Strong requirement for additional management functionalities on unmanned Inmarsat equipment (2010)
- Very close cooperation required from network provider (Inmarsat), the hardware manufacturor (Hughes) and the system integrator (Galaxy 1 Communications)
- *Remote Terminal Manager* became THE platform for management of remote communications
- As Inmarsat is an 'on-demand' service, integration of RTM with real-time billing and provisioning is essential for cost control

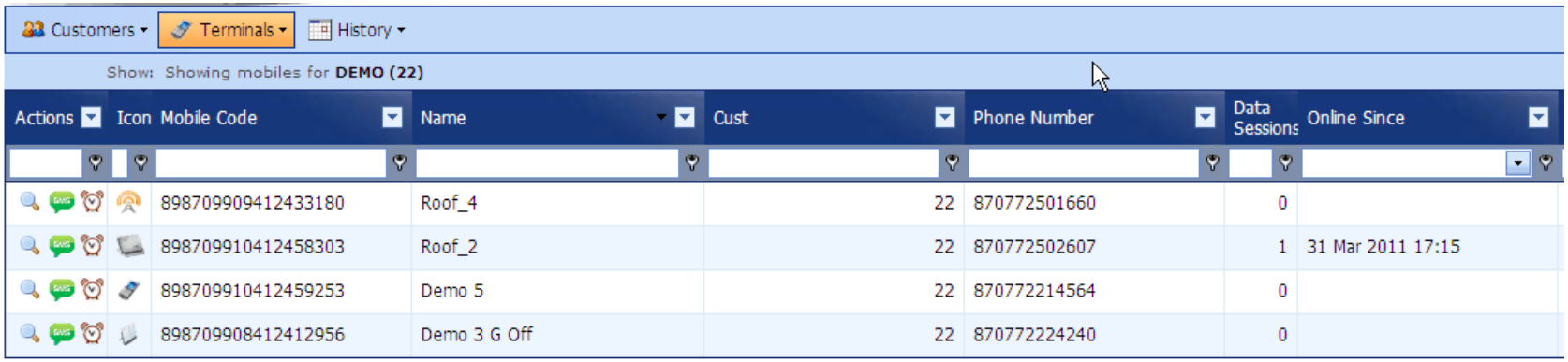
Background *Remote Terminal Manager* (2)

- Fully integrated with Hughes firmware
- Fully integrated with Inmarsat's network:
  - PoP
  - Firewalls
  - SMS gateway
- RTM has multi tier structure: used by other integrators (Emerson, Hughes, Verizon, AT&T etc)
- RTM has been developed by Galaxy 1 and Pragmalogic

Remote Terminal Manager

two main functionalities

- Web-based application that enables NOC to manage and control unmanned Inmarsat terminals in field
- Provides visibility



Actions	Icon	Mobile Code	Name	Cust	Phone Number	Data Sessions	Online Since
		898709909412433180	Roof_4	22	870772501660	0	
		89870991041245830 3	Roof_2	22	870772502607	1	31 Mar 2011 17:15
		898709910412459253	Demo 5	22	870772214564	0	
		898709908412412956	Demo 3 G Off	22	870772224240	0	

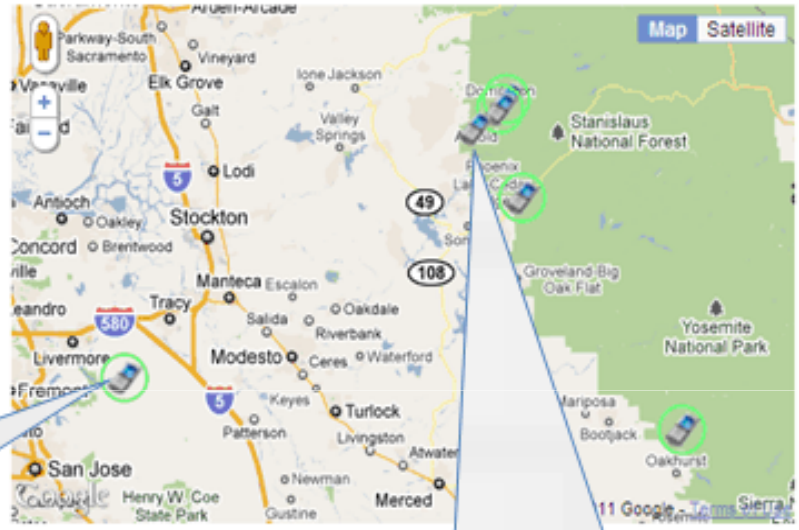
Summary of Features

- Having online access to all terminals in one screen;
- Being able to reboot terminal remotely, without a truck-roll;
- The option to remotely control the unmanned device in the field (set up an IP data session or take a data session down);
- The option to see the unmanned device in the field or all devices on one screen real-time;
- Geo Fencing: additional layer/level of security;
- Having access to certain info you only can get through Remote IP:
  1. IMEI (for asset tracking);
  2. Beam number (quick determination of spot-beam brings down trouble shooting time);
  3. Equipment Signal level information (C/N Ratio quick determination of signal strength brings down the trouble shooting time substantially);
- Being informed immediately when a unit goes offline;
- Securely communicate and control the equipment Out of Band, and not through the customers IP network;
- Option to do live trouble shooting through 'Automatic failure Notification' and logs. In case of an issue with the unit; network error code(s) are real-time are available;
- Various type of users rights: admin, read-only etc rights

Where is the terminal located ?

ID	Terminal	Actions	Reported	Lat	Lon
850	898709910412459579		15 Jun 2011	37.4400	-119.6300
849	898709910412458336		15 Jun 2011	37.5800	-121.5900
848	898709910412460282		14 Jun 2011	38.2400	-120.3600
693	898709910412458305		22 Mar 2011	38.0600	-120.1900
98	898709910412460283		19 Feb 2011	38.3200	-120.2500
89	898709910412460284		11 Feb 2011	38.2900	-120.2700
	898709910412458300				

Table options...

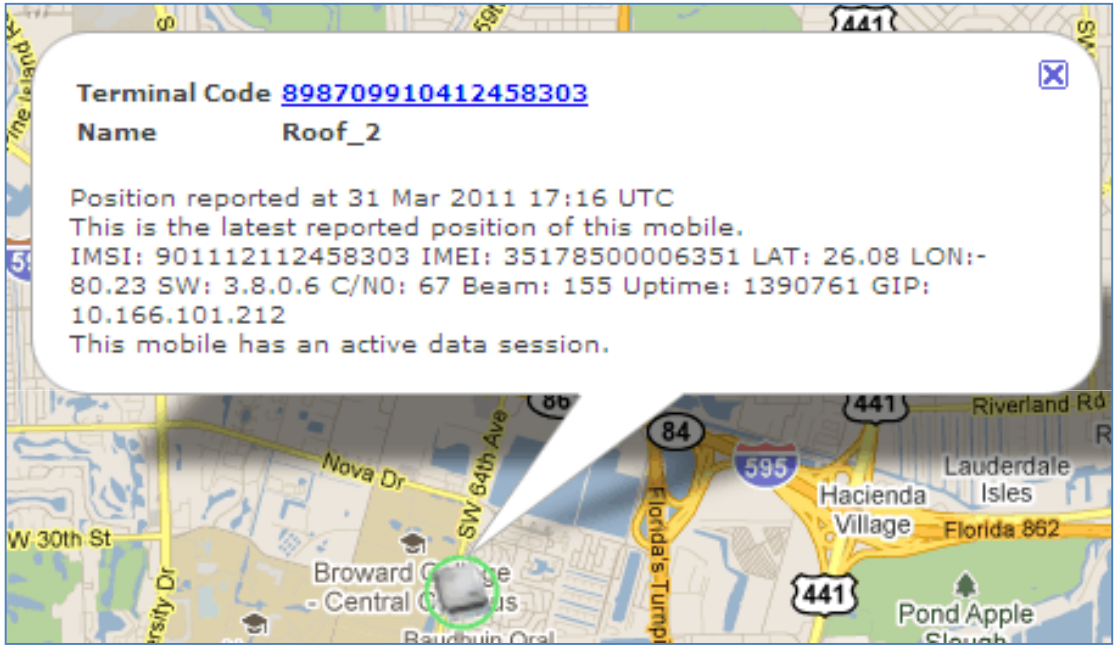


In the map you can see where the terminals are located. If it has a green circle around it, it means that it is online.

E.g. this terminal is off line.

Info from the site

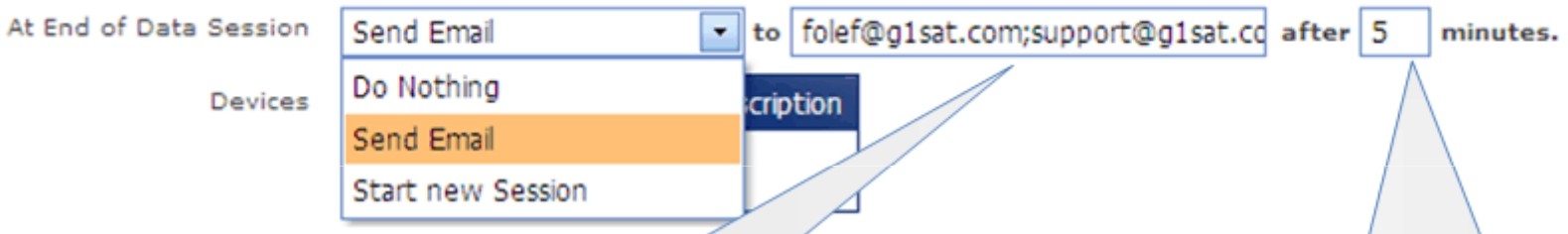
- IMEI of the terminal
- LAT and LON of the terminal
- IMSI number
- SW: firmware version
- Beam: spot-beam
- C/NO: (carrier over noise ratio): signal strength



Notification once terminal goes offline

Notification once Bgan terminal goes offline

You can set a notification to inform the NOC once the Bgan terminal goes offline.
This notification is based on a timeframe in minutes.

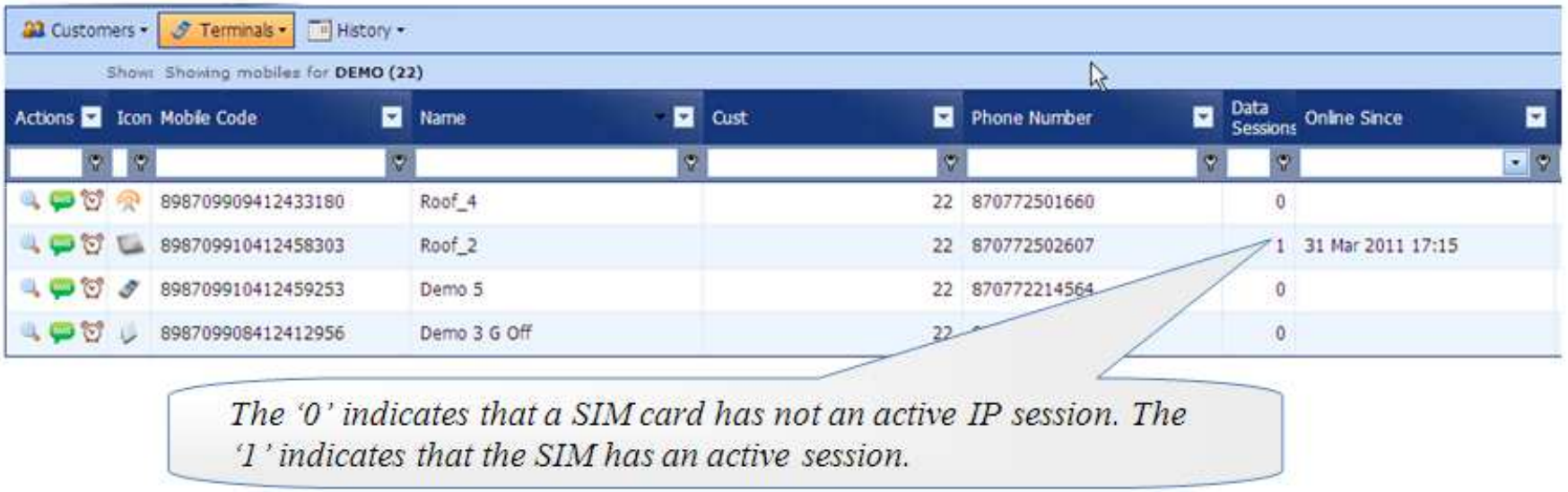


In this section you can set multiple email addresses.

In this section you can set the time. The terminal needs 2 to 3 minutes to reboot and reregister once it lost its connection. So you do not want to set the notification time to close to that 'reregister- time frame'

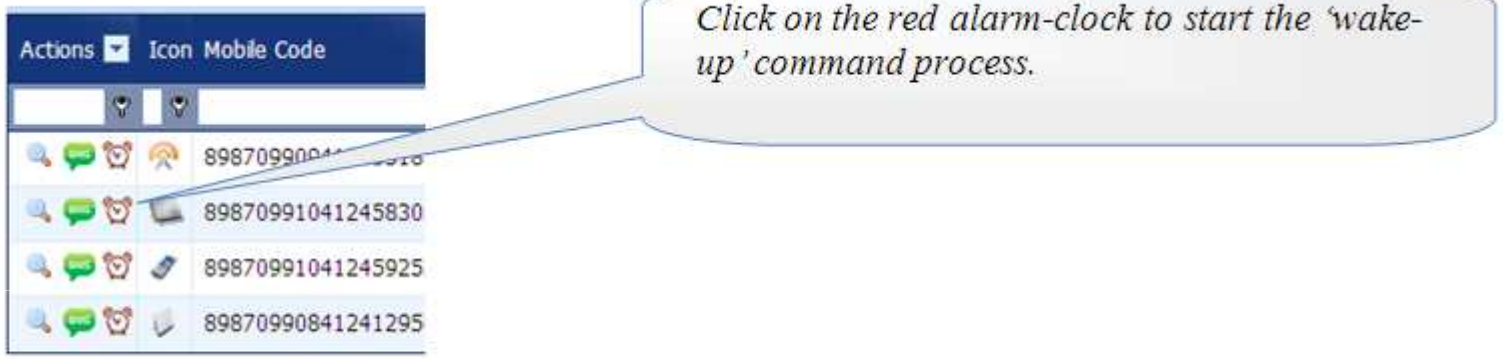
Are your satellite terminals online?

Real time view if the terminal is online

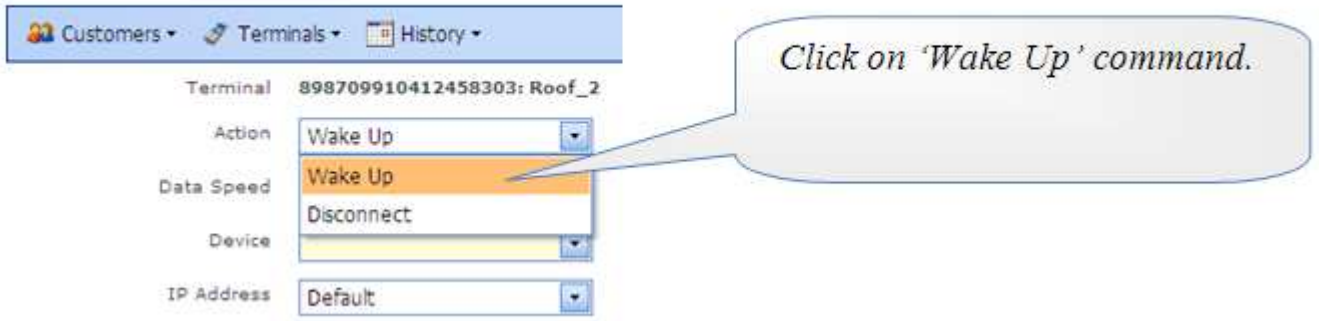


Remotely activating an IP session *(first steps)*

Step 1



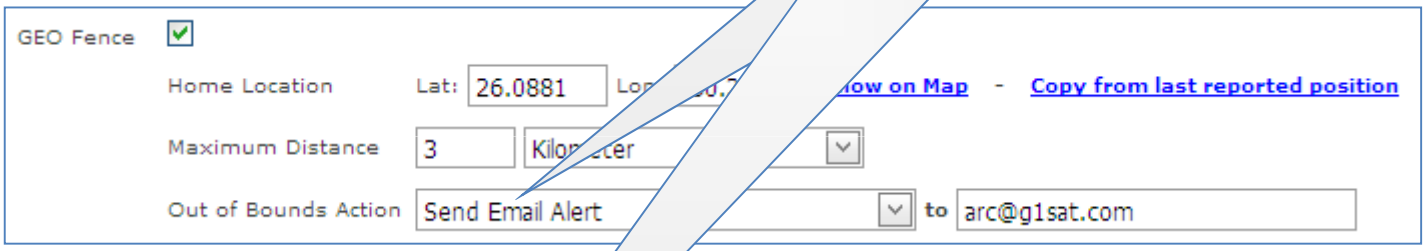
Step 2a

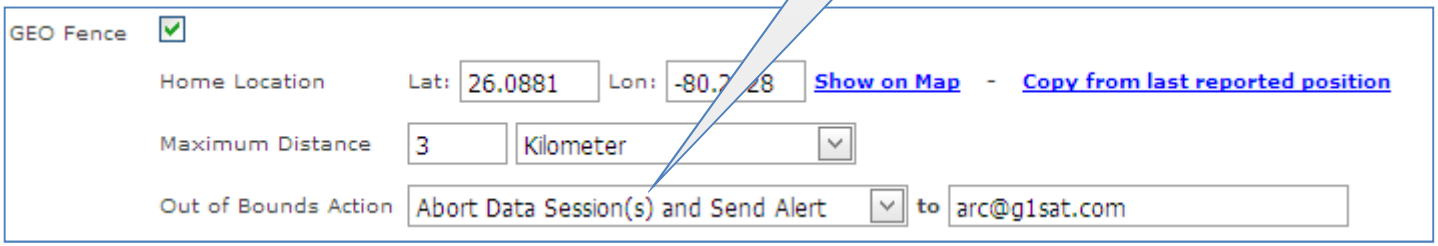


Adding level of security to terminal in the field

Geo-fencing

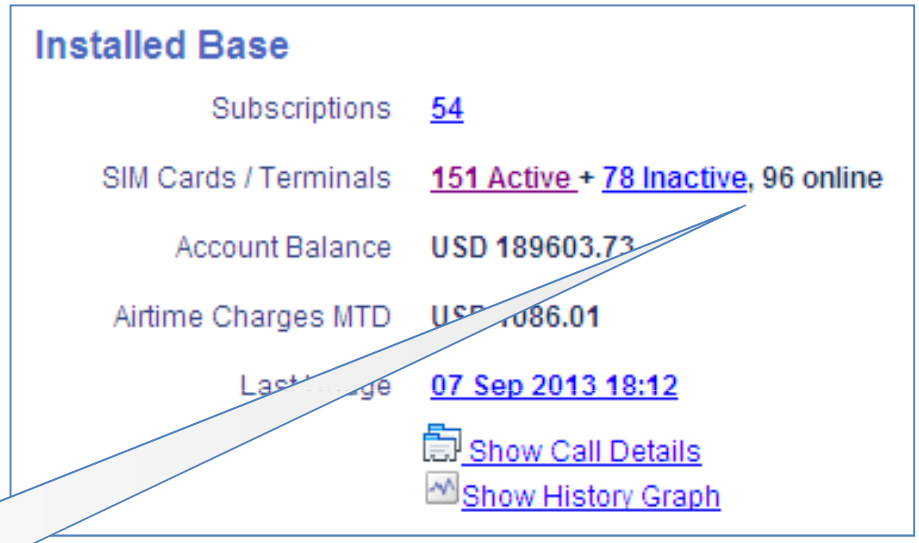
Customer can set a geo-fense on individual terminals. Once out of bound, you then either will be alerted or data session will be aborted.





RTM is integrated with billing and management system (1)

- In various ways RTM has been fully integrated with Billing and Provision platform > via main screen



On front page of billing and provisioning system you can see the number of active SIM cards and how many of those are online

RTM is integrated with billing and management system (2)

- RTM is also integrated on SIM card screen

On SIM card page of billing system you can see per SIM since when the card is online

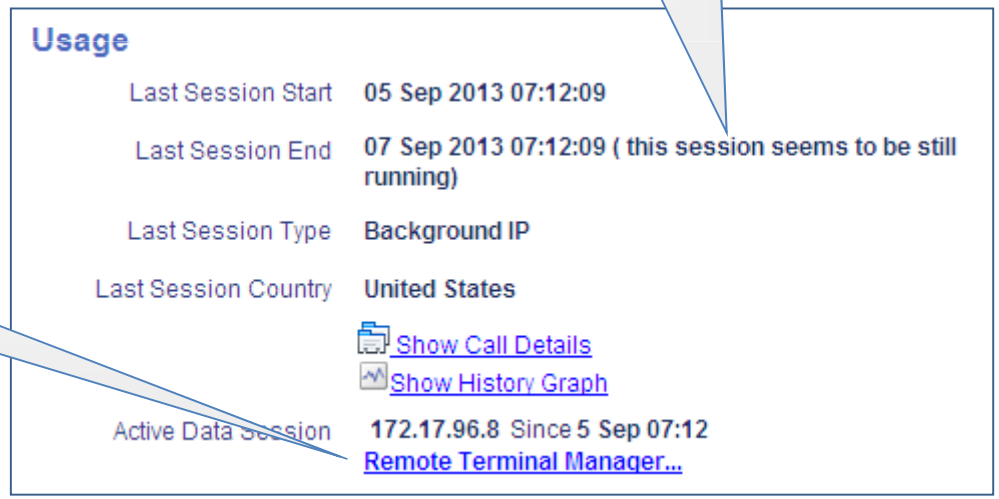
ICCID	Master MSISDN	Product	Status	Online	Name	Cost Center	Used	Location	Subscription			Airtime	
									Price Plan	Start	End	Charges	Value
898709911412504435	870772222888	BGAN	Activated	06 Jul	163.236.27.49	LINE ITEM 40 Pooled Plan 100 SIM	07 Sep 2013	USA	Line Item 40 for Pooled Plan 100_SIM_2GB	15 Apr 2013		0.000	69.290
898709911412504436	870772222889	BGAN	Activated		163.236.29.76	LINE ITEM 40 Pooled Plan 100 SIM	27 Aug 2012		Line Item 40 for Pooled Plan 100_SIM_2GB	15 Apr 2013			
898709911412504437	870772223294	BGAN	Activated	09 Jul	163.236.27.113	LINE ITEM 40 Pooled Plan 100 SIM	07 Sep 2013	USA	Line Item 40 for Pooled Plan 100_SIM_2GB	15 Apr 2013		0.000	20.810
898709911412504438	870772226605	BGAN	Activated		163.236.27.235	LINE ITEM 40 Pooled Plan 100 SIM			Line Item 40 for Pooled Plan 100_SIM_2GB	15 Apr 2013			
898709911412504439	870772226609	BGAN	Activated	06 Jul	163.236.27.46	LINE ITEM 40 Pooled Plan 100 SIM	07 Sep 2013	USA	Line Item 40 for Pooled Plan 100_SIM_2GB	15 Apr 2013		0.000	65.260
898709911412504440	870772226610	BGAN	Activated	29 Aug	163.236.27.108	LINE ITEM 40 Pooled Plan 100 SIM	07 Sep 2013	USA	Line Item 40 for Pooled Plan 100_SIM_2GB	15 Apr 2013		0.000	61.250

RTM is integrated with billing and management system (3)

- RTM is also integrated on a per SIM card level

On individual SIM card page of billing system you can see if the card is online

From individual SIM card level, you can click directly into RTM for more detailed information



RTM is integrated with billing and management system (4)

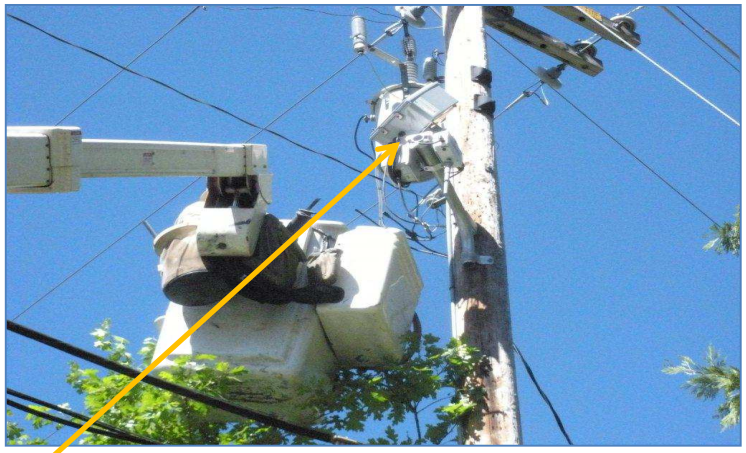
- RTM is also integrated on the usage per SIM card

Customer can see 'intermediate call records'. This is presented in grey

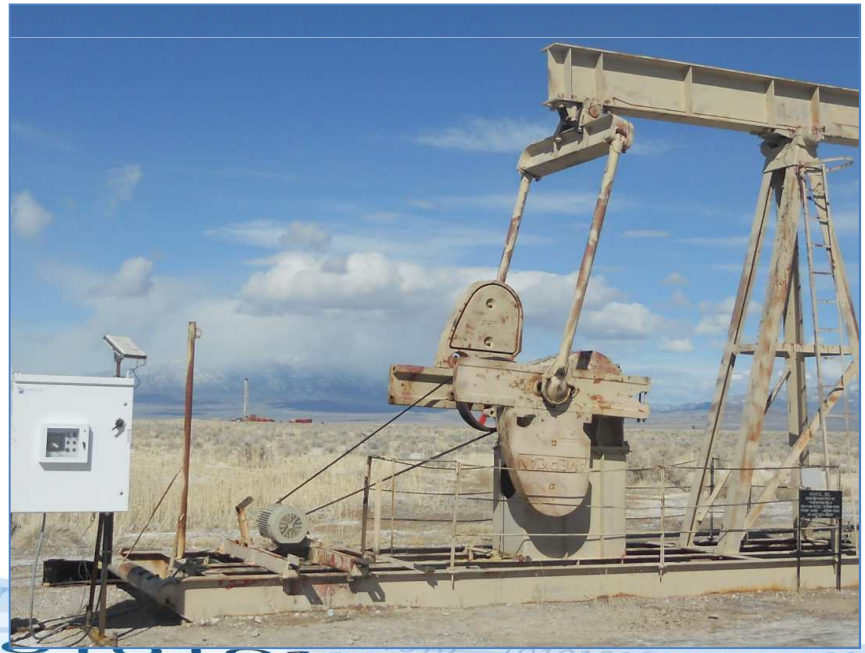
ICCID	Prod	Service	Origin		Start CDR	En	Volume		
			Number	Country			Total Volume		
							MB	Min	Msg
898709910412453514	BGAN	SMS	870772221373		01 Sep 01:15:56	:56			1
898709910412453514	BGAN	Background IP	870772221373	USA	01 Sep 08:54:37	ep 54:37	3.506		
898709910412453514	BGAN	SMS	870772221373		03 Sep 20:37:10	:37:10			1
898709910412453514	BGAN	Background IP	870772221373	USA	03 Sep 07:22:18	4 Sep 16:13:32	5.127		
898709910412453514	BGAN	SMS	870772221373		04 Sep 16:15:11	16:15:11			1
898709910412453514	BGAN	SMS	870772221373		04 Sep 18:36:55	18:36:55			1
898709910412453514	BGAN	Background IP	870772221373	USA	04 Sep 16:14:09	05 Sep 07:11:04	2.148		
898709910412453514	BGAN	SMS	870772221373		05 Sep 07:13:27	07:13:27			1
898709910412453514	BGAN	SMS	870772221373		05 Sep 23:18:43	23:18:43			1
898709910412453514	BGAN	Background IP	870772221373	USA	05 Sep 07:12:09	07 Sep 19:12:09	8.789		
							19.570	0	6

Bgan's installed

The equipment installed



HUGHES
R&M ENERGY SYSTEMS



For more information:

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