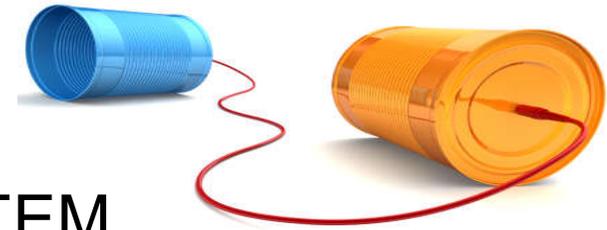




RTS DIGITAL NATIONAL TRUNKING SYSTEM

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# IP RADIO

Embarking the next generation of radio technology

A presentation by Dirk Bothma

# GSM COVERAGE IN SOUTH AFRICA



KEY AREAS HAVE  
GSM COVERAGE  
IN SOUTH AFRICA!



# SMART PHONES MEET TWO WAY RADIOS



EVOLUTION OF SMART PHONES HAVE CHANGED THE LANDSCAPE OF THE TRADITIONAL RADIO MARKET

**Conventional Radio System**



2 Way Radio



DMR  
Trbo



Trunking



BEST OF BOTH WORLD

Communicate to one or more by pressing one button

# OUR SOLUTION



## Cellular Network Coverage



Base Station



- Once a PTT button is pressed to transmit a voice message, the **voice message will be transmitted** via **data channel of the cellular network - VOIP**
- The **voice transmission will be compressed to Real Time Transport Protocol (RTP)** and route to **Telco Exchange**.
- Through Telco IP Backbone, the **data will be routed to Data Centre** before being **diverted to the intended receiver/ Group by IP**



## Server - SIP (Session Initiation Protocol) Gatekeeper

1. IP Radio register to Server as a SIP extension with unique ID
2. Server manages all calls
3. IP Radio sends Heart-Beat UDP to Server regular

## Call Setup

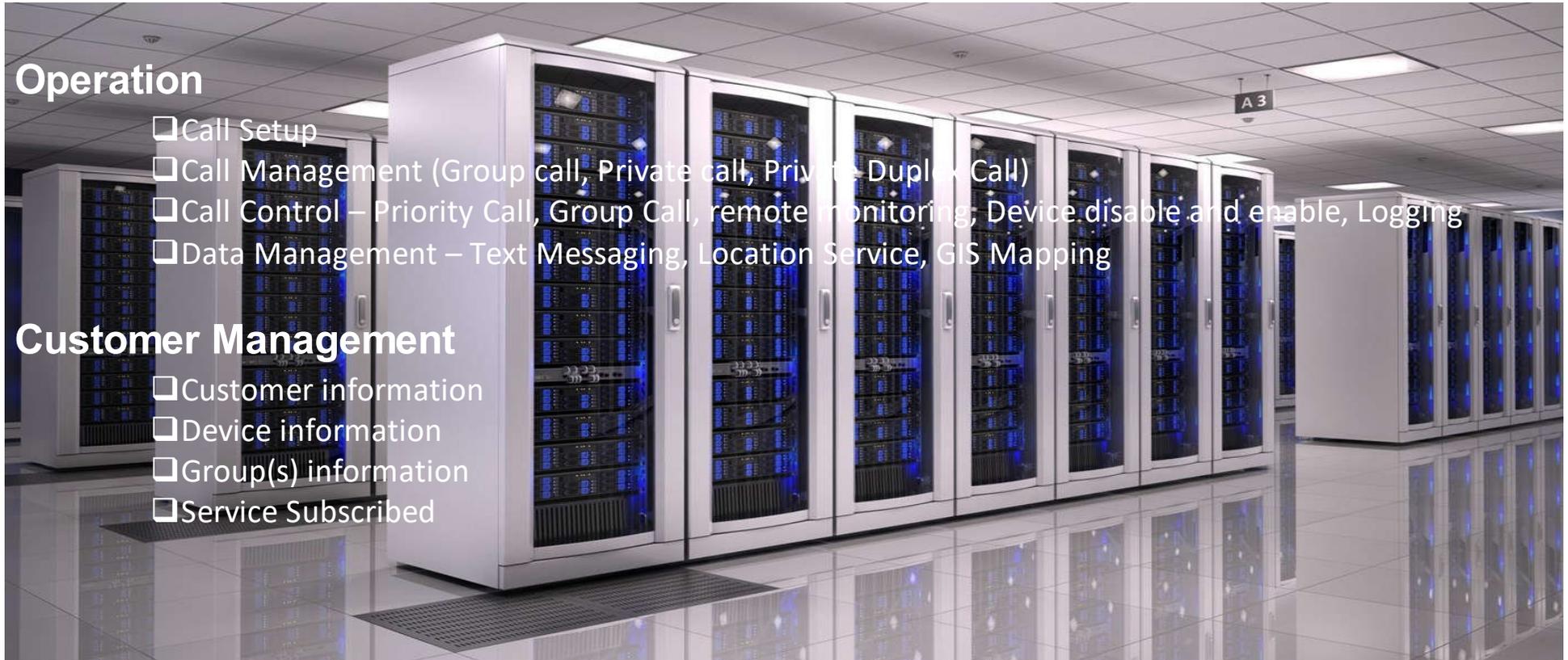
1. IP Radio initiates an IP Call (Group Call or Private Call) by sending SIP request packages to Server and will receive SIP permit; the active call SIP packages will be distribute to the target radio(s)
2. IP Radio sends voice RTP packages (Real-time Transport Protocol, codec AMR 4.75Kbps) to Server, and server will distribute the RTP packages to the target IP Radio(s)
3. Release PTT to finish the call

## Operation

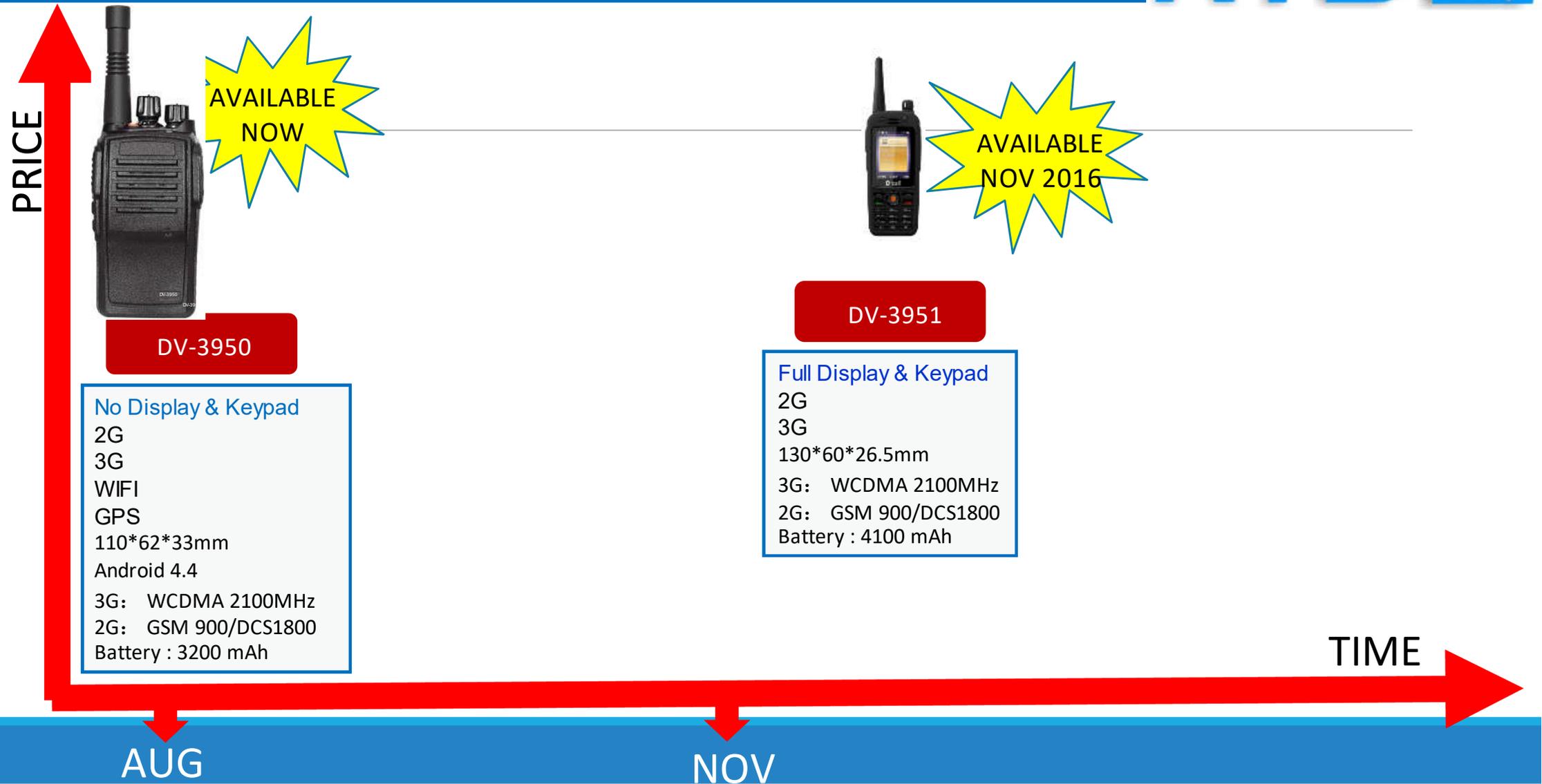
- Call Setup
- Call Management (Group call, Private call, Private Duplex Call)
- Call Control – Priority Call, Group Call, remote monitoring; Device disable and enable, Logging
- Data Management – Text Messaging, Location Service, GIS Mapping

## Customer Management

- Customer information
- Device information
- Group(s) information
- Service Subscribed



# PRODUCTS ROADMAP





## DV-3950: THE SMART IP TERMINAL

RTS DV-3950 is powered by Radio over IP technology and operating on nationwide cellular data network coverage and Wi-Fi. It allows PTT real-time seamless communications across a broad spectrum of users and carriers without any boundary restrictions

## Product Description

- Frequency: 2G 900 / 1800 MHz, 3G – 2100 MHz
- Enhanced speaker to enable **loud audio output**
- **Voice command** calling
- **Longer talk time** with 3200 battery
- Up to **120 hours of standby time**
- Crystal clear **digital sound**
- Hands-free operation
- USB and desktop charging
- Built-in **GPS**
- Enhanced authentication for improved **security**
- Long antenna for receiving and **transmitting proficiency**
- **Rugged and reliable** as a two-way radio but smarter!
- Buttons are programmable for emergency

## Product Features

**Instantaneous voice transmitting and receiving** to allow immediate response

**Secured communication** ensures privacy

## Enhanced user experience, coordination and efficiency

- **Private Call** – To call and talk privately with a specific user
- **Priority call** – Appoint priority enabled individual
- **Duplex Private Call** - Hands free duplex call
- **Group call** – Communicate one-to-many

## Call Control

- **Transmit interrupt** – allows authorized user to interrupt conversations during an emergency or to deliver critical communications
- **Device enabled / disabled** – device can be enabled or disabled if it is stolen or abused **remotely**
- **Enhanced encryption** – improve security

## Data Management

- **Event logging** – capturing voice / text / video / picture and location
- **Location tracking** – capture user location
- **Location** – Real time and history movement downloads

## PRODUCTIVITY



# CONSOLE



GPS LOCATION SERVICES



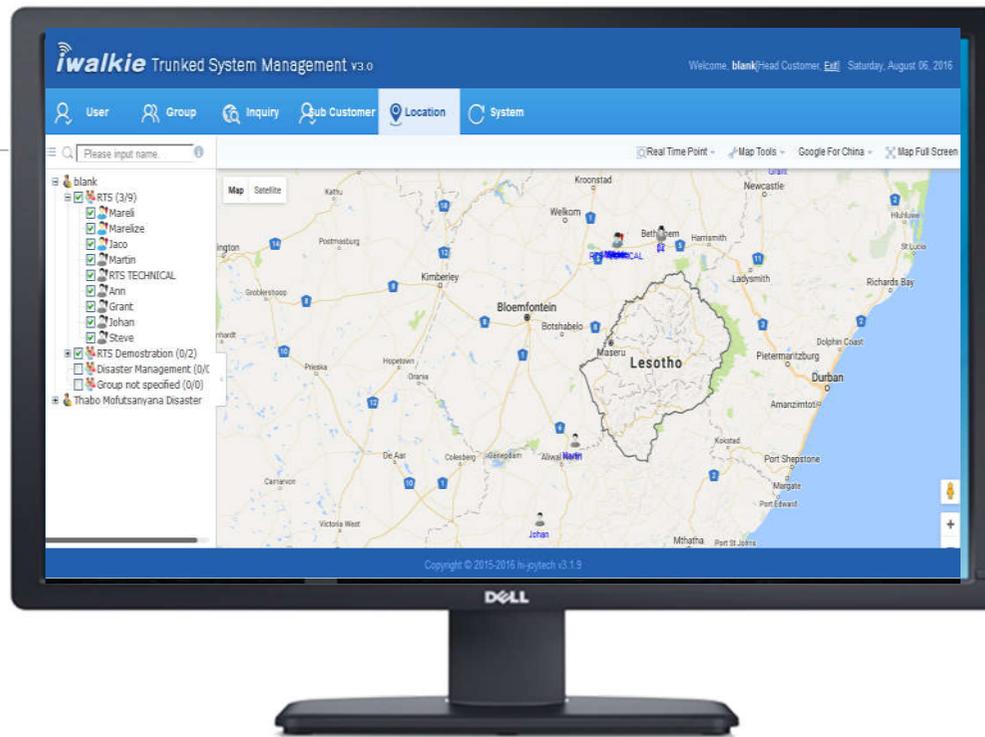
SENDING TEXT MESSAGES



ONE TO ONE  
ONE TO ALL  
PRIORITY CALL  
Duplex Private CALL



DYNAMIC GROUP  
CONFIGURATION



GPS PLAYBACK



ELECTRONIC FENCING



WORLDWIDE MONITORING



USERS ACTIVE LIST  
REMOTE MONITORING



TIMESTAMPING

# CONSOLE: APPLICATIONS



Monitoring vehicle  
and tracking delivery



Communicate and monitoring  
offices and factories



Communication with employees



# TECHNOLOGY COMPARISONS



	Conventional Radio	Trunking	IP
<b>Frequency Infrastructure</b>	Allocated Frequency Point-to-Point	Allocated Frequency Repeater, Base Station, Antennae, Site Premises	<b>Cellular Network</b>
<b>Coverage Indoor/Outdoor</b>	Range Limitation	Limited by site installation	<b>Nationwide</b>
<b>Security</b>	Low	Medium	<b>High</b>
<b>Interference</b>	High	Medium	<b>Minimum</b>
<b>Data Capability</b>	Nil	Limited	<b>GPS, Text messaging</b>
<b>Bandwidth</b>	Narrowband	Narrowband	<b>Broadband</b>
<b>Over the Air Programming</b>	Limited	Limited	<b>Yes</b>
<b>Dynamic Grouping</b>	No	Limited	<b>Yes</b>
<b>Event logging</b>	Limited	Limited	<b>Full</b>
<b>Enterprise Productivity Application</b>	Limited	Limited	<b>Capable</b>



# 2 WAY RADIOS: A COMPARISON



## Two-way radios can just do much....

Standard two-way radios are single-purpose communication devices that don't scale to meet the demands of today's mobile data user's needs.

## LIMITATIONS

**Limited Frequency** resources in a Congested Spectrum environment

Need the **frequency from Authority** to operate

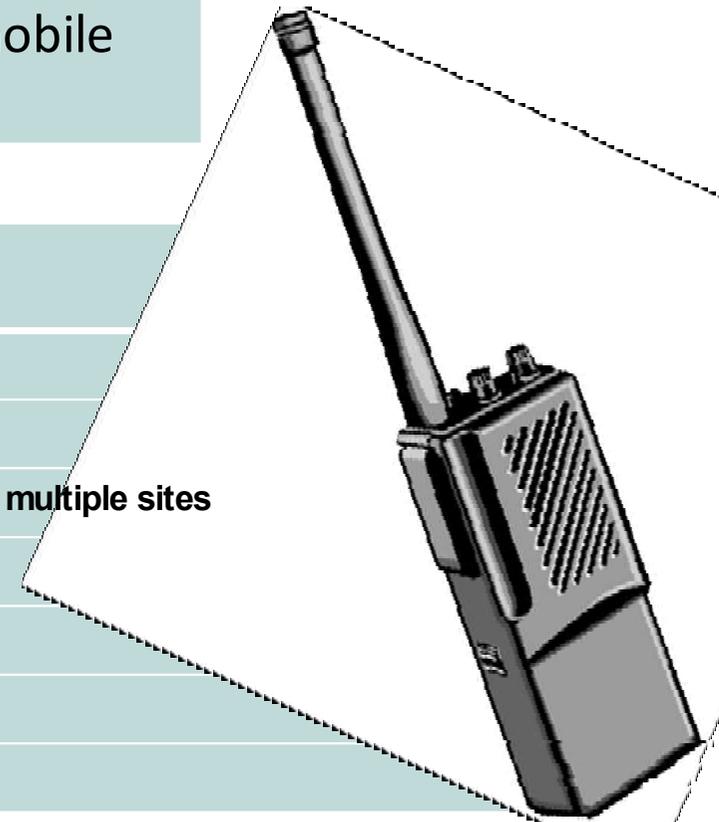
**Cross Interference:** Approve site Frequency - Re-use or illegal usage in other site or multiple sites

**Lack of Data capability** and **speed**

**Limited VAS** such as GPS, Event Logging etc **lead to drop of productivity**

**Long lead time** of frequency application especially for Repeaters

**Unsecured and encrypted Communication**





## TRANSPORTATION

Courier  
Taxi  
Limos Service  
Tow Truck  
Railway  
Airport  
Seaport  
Light Rail  
MRT  
Logistics



## CONSTRUCTION

Site  
Cement delivery  
Electrical  
Excavating  
Plumbing  
Roofing



## SECURITY

Hotel  
Condo  
Offices  
Factory  
Sports Events  
Education



## HOSPITALITY

Restaurant  
Hotel  
Laces of interest  
Resort  
Shopping Mall  
Supermarket



## MANUFACTURING

Factory  
Light industry  
Ware Housing



- ✍ Programmable over the air
- ✍ Free Dispatch software & Google Maps
- ✍ Dynamic Grouping
- ✍ Live GPS tracking



**RTS** 

**BENEFITS**



## Simplify Communication, Increase Work Performance and Productivity

**Save money** with Single Device - Integrates PTT, regular cellular voice, email, text, mobile broadband data, GPS, and enterprise productivity applications.

Future-proof their investment and take instant communications to a whole new level with **advanced feature & Nationwide and Global Coverage**

Leverage the **most advanced technology** to stay on schedule and ahead of the competition

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ship  
ate with  
sage communication  
**communication** noun  
2 something that commu  
tion, a letter or messag  
communication, e.g. a  
or

For more information, please contact  
Rob Unger  
DR Communications  
Email: [rob@drcomms.co.za](mailto:rob@drcomms.co.za)

