Radioactive Networks



iServ System Manual Version 0.0.3

POBox 169 Ingleburn NSW 2565 Australia Phone: 0412 929 634 – International +61 412 929 634 (Registered Office: 23 Amanda Place, Ingleburn 2565) www.radio-active.net.au - Darryl@Radio-active.net.au

Radioactive Networks Pty Ltd - ABN 84 101 275 209

Table of Contents

Table of Contents	2
Introduction	4
System Requirements	4
Copyright	5
Other Documents	5
Disclaimer	5
Acknowledgements	5
Software Architecture	6
iServ	6
iLog	6
iMessage	6
iTrack	
OziAPRS – APRS for OziExplorer and MapPoint	7
Embedded GPRS Modem	
Mobile Data Terminal	
Setup	9
Installing the software	
Installing iServ	
Installing iLog	
Installing iMessage	
Installing OziAPRS	
Installing OziExplorer	
Configuring Directories	
Database	
Application License Files	
ÖziExplorer	
OziAPRS	11
iServ, iMessage, iLog	11
Software Operations	
Software Components	
iServ	
Connections Screen	14
Vehicles List Screen	
Users List Screen	15
Pass-through Text Screen	15
Callsign List Screen	17
Outgoing Message Queue Screen	
Latest Positions Screen	
iLog	
iMessage	
Logon Screen	
Live Data Screen	
All Jobs List Screen	
My Jobs List Screen	
Job Request Screen	

P2P Message Entry Screen	23
Outgoing Message Queue Screen	
Bin Lift Screen	
OziAPRS & OziExplorer	
Mobile Data Terminal Operations	26
Concepts	26
Incoming Messages	26
Lights and Icons	27
Red Light	27
Green/Yellow Light	27
GPS Icon	27
01/10 Icon	28
Job Flowchart	28
Bin Lift	30
Message Menu	32
Control Screen	33
Tasks	35
Adding New Vehicles	35
Adding translations from Net960 Serial Numbers to Callsigns	36
Updating translation between Net960 and Callsigns or Plates	Error!
Bookmark not defined.	
Database	
Database Introduction	38
Database	38
Database Introduction	38 38
Database Introduction Database Tables Network Architecture TCP/IP Ports	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of XML Files	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of XML Files Backup of Database File	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of XML Files Backup of Database File Startup of PC	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of XML Files Backup of PC Something is not working	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of XML Files Backup of PC Something is not working No vehicle positions are showing up	
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of Data Backup of XML Files Backup of Database File Startup of PC Something is not working No vehicle positions are showing up PC Application Training.	38 38 39 39 39 39 40 40 40 40 41 42 42 42 42 42 42 42 42 43 44 44 45
Database Introduction Database Tables Network Architecture TCP/IP Ports Port 5001 for iMessage and OziAPRS Clients Port 8001 for Net960 and M110 units Port 80 for NetGPS Protocol iServ Component Interactions Backups of Data Backup of XML Files Backup of PC Something is not working No vehicle positions are showing up	

Introduction

Welcome to Radioactive Networks and our iServ product. This product is a new software package designed for tracking vehicles, and job management. Using in-vehicle terminals and GPRS modems, we are able to provide a unique set of capabilities.

The product allows remote messaging and position monitoring over an network, and storing all data into a database for future reference, and billing as required.

System Requirements

The system has a number of dependencies. Some are mandatory, and some are optional.

Server	PC running Windows 2000 or Windows XP	Mandatory
	512 Mbytes RAM	Mandatory
	Internet Access with Permanent IP address	Mandatory
	Microsoft Access	Optional
Messaging and Reporting Station	PC running Microsoft Windows 2000 or Windows XP	Mandatory
	256 Mbytes RAM	Mandatory
	Microsoft Access	Recommended
Position Monitoring Station	PC running Microsoft Windows 98 or better	Mandatory
	128 Mbytes RAM	Mandatory

Copyright

The iServ system is protected by copyright and should not be copied without our expressed written permission. Certain components are licensed from other parties and are only distributed in accordance with their license conditions.

Other Documents

This manual should be read in reference to a number of other documents.

Disclaimer

The entire iServ system uses best effort delivery to move data around, log it to a database and display it at a number of locations. Through its very nature, such a system is complex, and errors may creep in. Radioactive Networks may not be held liable for the failure of our software other than the rectifying the software.

The in-vehicle equipment should be used in a manner that does not distract the drive, and is used in a legal manner. Radioactive Networks will not accept any liability relating to the use or misuse of the in-vehicle units. Some jurisdictions do not permit the use of in-vehicle computers. Care should be taken to ensure that your jurisdiction allows for their installation.

Acknowledgements

Radioactive Networks would like to acknowledge the support of our contract programmer, Kevin Dawson. Without his work, we would have been unable to complete this project. His professionalism has made this product what it is today.

Software Architecture

The iServ system is made up with a number of separate components that are brought together to create a full application. These components can be combined to suite specific requirements.

The components include

- iServ
- iLog
- iMessage
- OziAPRS APRS for OziExplorer
- iTrack (Future)
- Embedded GPRS Modem
- Mobile Data Terminal

iServ

The central part of the system is the iServ application. iServ is a server for the other applications, logs messages coming in and routes messages. The server will accept data from iMessage, M110 GPRS Tracking Units, Net960 Mobile Data Terminals and NetGPS PDA's.

The application logs messages and jobs using XML for database logging by XML.

iLog

iLog is a database logging component. It takes XML files exported from iServ, and writes them into the database. iLog is a separate component to simplify issues in case of problems with the database. The XML files can be imported at a later date to reconstruct a corrupted database. Alternately, the XML files can be easily imported into different databases of different platforms.

iMessage

The message and job entry application is known as iMessage. It is where operators are able to assign work requests, and monitor messages.

iTrack

iTrack is a product for displaying maps in OziExplorer using the WWW to transfer data. iTrack is not yet being distributed, but will be in the future.

OziAPRS – APRS for OziExplorer and MapPoint

OziAPRS is a vehicle position monitoring system for OziExplorer and Microsoft MapPoint.

Embedded GPRS Modem

The embedded GPRS modem acts as an interface between the GPRS Radio Network, and the Mobile Data Terminal. It contains an entire TCP stack, and reduces the complexity of the mobile data terminal software.

The exact model of the GPRS modem depends on the requirements of the installation.



Mobile Data Terminal

The mobile data terminal is a 386ex computer with 8 line 40 character display, flash memory and an internal modem for voice communications. The Mobile Data Terminal acts as the interface for the user.

The Mobile Data Terminal contains proprietary software developed by Radioactive Networks.



Setup

Installing the software

The software package is based on the Microsoft .NET architecture. The first step in installing the software is to install the .NET runtime libraries. This may lead to needing to reboot the machine several times.

Installing iServ

iServ should be installed c:\program files\iServ\iSev

Installing iLog

iServ should be installed c:\program files\iServ\iLog

Installing iMessage

iMessage should be installed to c:\program files\iServ\iMessage

Installing OziAPRS

OziAPRS should be installed to c:\program files\OziAPRS. Unlike the previous three products, OziAPRS does not use the .NET runtimes and can be installed on a wider range of computers

Installing OziExplorer

OziExplorer should be installed into C:\Program files\OziExplorer.

Configuring Directories

iServ needs to be configured with three directories that XML files will reside for uploading into the database. These directories will need to be created, and the settings changed in iServ.

We recommend that the following directories are created and used

C:\Program Files\iServ\XML\Upload C:\Program Files\iServ\XML\Error C:\Program Files\iServ\XML\Done Once the directories are created, the directories will need to be changed in iServ. They can be entered in the DataBase menu. Once the three directories have been entered, iMessage and iLog will need to be restarted.

Database

iServ and iLog need access to the iServ Database. We recommend that this database is copied to

C:\Program Files\iServ\Database\[ClientName].MDB

Once this file is copied to the desired location with the correct filename, it needs to be entered into iServ, under the Databases menu. Once it has been entered, you will need to restart iServ and iMessage.

Application License Files

Various programs supplied use license files of one type or another to restrict unauthorized usage. We suggest that you record the license file details on the lines bellow.

OziExplorer

The OziExplorer software comes with two numbers of the form 1234-5678-9012 \$00001111

These numbers will need to be entered into OziExplorer as per the instructions that are included with the software.

____^{_}____^{_}____

OziAPRS

The OziExplorer software required you to enter two pieces of information in the Register area under the Help menu. These are an EMAIL address and registration key. The numbers are of the form

__ __ __ __ __ __ __ __ __ __ __ ___ ___

test@radio-active.net.au 123456789ABC

OziExplorer Map Files

A number of different maps need to be installed. The licenses for these are included with the CD's. Details on installing these disks can be found on www.gpsoz.com.au

iServ, iMessage, iLog

The OziExplorer software required you to enter two pieces of information in the Register area under the Help menu. These are an EMAIL address and registration key. The numbers are of the form

test@radio-active.net.au	
123456789ABC	

Email	
iServ	
iMessage	
iLog	

Software Operations

In order to use this software, the iServ and iLog applications MUST be running.

Should iServ not be running, field units will be unable to contact the database or connect to the receive jobs and messages. As a result it is vitally important that iServ is running at all times.

iLog is not as critical. Its job is to write entries into the database storing where vehicles were at a particular point in time, and which jobs were worked on. The iLog application reads XML files and moves them when finished with them. If it is not running, the database will not reflect the current status of the system.

Software Components

iServ

Connections Screen

The connections screen contains one line for every connection to the server. Connections can be manually killed by clicking on the button at the end of the line corresponding to the connection.

Just because a connection appears on this table does not mean that the connection is working. With a GPRS connection, there will often be cases where zombie connections exist.



Vehicles List Screen

VehicleNu	VehicleReg	VehicleCall	VehiclePho	
			(null)	
		VK2XSB-1		
			0412 929 6	
			(null)	
			(null)	
5	XLZ123		(null)	
			(null)	
7	iuidsf		(null)	
8	dsffidi		(null)	
9	EL-1	EL-1	(null)	
10	123456	123456	(null)	
11	311530	311530	(null)	
			(null)	
13	ISERVD	ISERVD	(null)	

Users List Screen

ile I	Vetwork E	Database Ser	vers Refre	ish Help								
Con	nections V	ehicles User:	Events F	Passthrough Te	ext Callsig	ns Outgoin	g Message Quei	ue Test1	Test2			
	DriverNun	n DriverNam	DriverPhon									
•	0		1									
	1		2									
	2		1									
	3		1									
	4		1									
	5	EL-1	1									
	6		1									
	8		1									
	9		1									
	9	ISERVD	1									

Pass-through Text Screen

le Network Database Servers Refresh Help	
Connections Vehicles Users Events Passthrough Text Callsigns Outgoing Message Queue Test1	Test2
Line:310917xISERV-UIISISERV 310917 20040123050628 200401230506281 5052049E340072055000000 Line:MXG305ERV-UIISISERV 310917 20040123094036-This is a message for non-fussy people Line:310917xISERV-UIISISERV 310917 20040123050645 200401230506451 5052050E340072155000000 Line:MXG305ERV-UIISISERV 310917 20040123094036-This is a message for non-fussy people Line:MXG305ERV-UIISISERV 310917 1MSG 20040123094036-This is a message for non-fussy people Line:310917xISERV-UIISISERV 310917 MSG 20040123004036-This is a message for non-fussy people Line:310917xISERV-UIISISERV 310917 MSG 200401230074150040123050741 5052050E34007205000000 Line:MXG305ERV-UIIS310917 MSG 20040123050741 20040123050741 5052050E34007205000000 Line:310917xISERV-UIISISERV 310917 MSG 20040123050741 5052050E34007205000000 Line:310917xISERV-UIIS310917 MSG 20040123050741 50040123050741 5052050E3400745000000 Line:310917xISERV-UIIS310917 MSG 20040123050741 50040123050741 5052050E3400745000000 Line:310917xISERV-UIIS310917 MSG 20040123050741 50040123050741 5052050E3400745000000 Line:310917xISERV-UIIS310917 MSG 20040123050741 5004012305074550000000 Line:310917xISERV-UIIS310917 MSG 20040123050741 5004012305074550000000 Line:310917xISERV-UIIS310917 MSG 20040123050741 5002012300001 505205E34007450000000 Line:310917xISERV-UIIS310917 MSG 20040123050857 20040123050857 10522054E340071550000000 Line:310917xISERV-UIIS310917 MSG 20040123050857 2004012305085715052054E3400716550000000 Line:310917xISERV-UIIS310917 20040123050857 2004012305085715052054E3400716550000000 Line:310917xISERV-UIIS310917 20040123050857 2004012305085715052054E3400716550000000	

Callsign List Screen

	HardwareA	Callsign	
•	871487389	VK2ABC	
	787878834		
	204160402		
	784375878		
	998910903		
	777283499		
	909493878		
	248498499		
	998439800		
	228439800		
	123489348		
	410934900		
	350030950		
	310917	310917	
		123456	
		311530	
	IMSG	IMGS	
	ISERVD	ISERVD	

Outgoing Message Queue Screen



Latest Positions Screen

	ers Events Passth Lon Alt : 150.8673 0 150.8673 0		signs Outgoing Message Oueur Date/Time 22/02/2004 9:04:47 PM 22/02/2004 9:04:02 PM 21/02/2004 7:28:15 AM
1 310917 -34.012 1 2 315319 -34.01216 1	50.8673 0 150.8673 0	0 0	22/02/2004 9:04:47 PM 22/02/2004 9:04:02 PM
2 315319 -34.01216 1	50.8673 0	0 0	22/02/2004 9:04:02 PM
-			
3 315318 -34.012 1	50.8675 0	0 0	21/02/20047:28:15 AM
4			

iLog

iLog is the part of the iServ suite that logs messages received by the iServ

_

📙 Form1	
Done Load Database 22/01/2004 12:34:11 AM - Positio 22/01/2004 12:34:27 AM - Positio 22/01/2004 12:34:28 AM - Positio 22/01/2004 12:35:14 AM - Positio 22/01/2004 12:35:14 AM - Positio 22/01/2004 12:36:17 AM - Positio 22/01/2004 12:36:17 AM - Positio 22/01/2004 12:36:48 AM - Positio 22/01/2004 12:36:48 AM - Positio 22/01/2004 12:37:04 AM - Positio 22/01/2004 12:37:04 AM - Positio 22/01/2004 12:37:36 AM - Positio	n n n n n n n n n
22/01/2004 12:37:52 AM - Positio	n

application, and places them into the database. The application is external to the iServ application to improve reliability of the system as a whole.

On starting up, the program waits for about 10 seconds for all the database connections to start up. Once this happens, the application starts listening for messages to log to the database.

iMessage

Logon Screen

On opening the iMessage application, the user is presented with the Logon Screen. In the future this screen will have the ability for the user to enter a username and password. At the current time, all the user can do is click the 'Logon' button.

Pressing the button sends a message to the server informing it that the user has just logged on. It also then requests an update on all open messages from the database, and a list of all the users of the system.



Live Data Screen

The Live Data screen is an overview screen that shows what has been happening on the network. It monitors all traffic between stations and from the server to the station. The data on this screen is updated in real time.

The data can be cleared with the 'Clear Live' button. The data is not saved when the program is shut down and restarted.

	From	From User	To Vehicle	To User	Message	Message	When	Whore - Let	Where - Lon	Open?	Action	MsaSea	JobID
1 5	VK2TDS	TIOITOSEI	IMSG	100361	ADD JOB	RE:This is a			WINBIG - LOIT	Openi	Action	20040123040	
	VK2TDS		IMSG		ADD JOB	RE:11111111						20040123040	
	VK2TDS		IMSG		ADD JOB	RE:This is a						20040123040	
	K2TDS		IMSG		ADD JOB	RE:This is a						20040123040	
	K2TDS		IMSG		ADD JOB	qqqqqqqqqqq						20040123040	
	K2TDS		IMSG		ADD JOB		23/01/2004 4:					20040123040	107451058
	VK2TDS		IMSG		ADD JOB	Are You Ther						20040123040	
3	VK2TDS		IMSG		ADD JOB	Are You Ther						20040123040	107428566
3	VK2TDS		IMSG		ADD JOB	DDDDDDDC	23/01/2004 4					20040123040	107426262
0	VK2TDS		IMSG		ADD JOB	000000000	23/01/2004 4					20040123040	10742626
1	VK2TDS		IMSG		ADD JOB	BBBBBBBBB	23/01/2004 4					20040123040	10742626
2	VK2TDS		IMSG		ADD JOB	Алалалал	23/01/2004 4					20040123040	10742626(
3	VK2TDS		IMSG		ADD JOB	********	23/01/2004 4:					20040123040	10742626(
4 1	SERV		IMSG		Add User	ISERVD	23/01/2004 4:					20040123040	
5 1	SERV		IMSG		Add User	IMGS	23/01/2004 4:					20040123040	
6 1	SERV		IMSG		Add User	311530	23/01/2004 4:					20040123040	
7 1	SERV		IMSG		Add User	123456	23/01/2004 4:					20040123040	
8 1	SERV		IMSG		Add User	310917	23/01/2004 4:					20040123040	
9 I	SERV		IMSG		Add User		23/01/2004 4:					20040123040	
	SERV		IMSG		Add User	NOCALL	23/01/2004 4:					20040123040	

All Jobs List Screen

3 VK2TDS IMSG RE-This is a 1074515203V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 4 VK2TDS IMSG RE-This is a 1074515203V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 5 VK2TDS IMSG regrapqaqaqaq 1074510581V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 6 VK2TDS IMSG TexBox6 1074510581V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 7 VK2TDS IMSG Are You Ther 107432427V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 9 VK2TDS IMSG DDDDDDDDL 1074262622/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG DDDDDDDDL 1074262622/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG CCCCCCCC1074262617/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BBBBBBBBBE 107	ogin	Live Data	Bin Lift All	Jobs My Job Q	ueue Users	Job Reque	st P2P V	ehicles All U	Isers Outgoin	g Message (Queue	
2 VK2TDS IMSG RE1111111 1074515352/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 3 VK2TDS IMSG REThis is a 1074515203/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 4 VK2TDS IMSG REThis is a 1074515203/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 5 VK2TDS IMSG gqqqqqqq1074510937/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 6 VK2TDS IMSG Are You Ther 1074314315/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 7 VK2TDS IMSG Are You Ther 1074324227/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 8 VK2TDS IMSG Are You Ther 1074242622/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 9 VK2TDS IMSG Are You Ther 1074242622/NOT DONE ADD JOB ???		From		Message	ID	Expiry Date	ACK?	225	Reassign	???	Action	
3 VK2TDS IMSG RE-This is a 1074515203V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 4 VK2TDS IMSG RE-This is a 1074515203V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 5 VK2TDS IMSG regrapqaqaqaq 1074510581V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 6 VK2TDS IMSG TexBox6 1074510581V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 7 VK2TDS IMSG Are You Ther 107432427V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 9 VK2TDS IMSG DDDDDDDDL 1074262622/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG DDDDDDDDL 1074262622/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG CCCCCCCC1074262617/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BBBBBBBBBE 107								???	Reassign	Delete		
4 VK2TDS IMSG RE:This is a 1074514915V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 5 VK2TDS IMSG qqqqqqqqq1074510597/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 6 VK2TDS IMSG TexBox6 1074510591/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 7 VK2TDS IMSG Are you Ther 107432427/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 8 VK2TDS IMSG Are you Ther 1074285666V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 9 VK2TDS IMSG Are you Ther 107428566V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG CCCCCCCC1074285617/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BB8BBBBBBE1072425612/NOT DONE ADD JOB ??? Reassign Delete CLI									Reassign	Delete		
5 VK2TDS IMSG qqqqqqqqq<1074510597V/NOT DONE	3	VK2TDS	IMSG	RE:This is a	1074515203	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE	
6 VK2TDS IMSG TexBox6 1074510591V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 7 VK2TDS IMSG Are you The i 107432427V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 9 VK2TDS IMSG DDDDDDDL 107452622V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 9 VK2TDS IMSG DDDDDDDDL 107426262V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG CCCCCCCC1074262617V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BBBBBBBB 1074262617V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG BAAAAAAAKI 1074265017V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG AAAAAAAKI 1074265007V NOT DONE ADD JOB ??? Reas	4	VK2TDS						???	Reassign	Delete		
7 VK2TDS IMSG Are You The 107432427/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 8 VK2TDS IMSG Are You The 107428666/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 9 VK2TDS IMSG DDDDDDDDT07426622/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 10 VK2TDS IMSG CCCCCCCC1074282617/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 11 VK2TDS IMSG BB8BBBBB10174262612/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 12 VK2TDS IMSG BAAAAAAAA/AA/107426612/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE 12 VK2TDS IMSG BAAAAAAAA/AA/107426612/NOT DONE ADD JOB ??? Reassign Delete CUCK HERE	5	VK2TDS						???	Reassign	Delete	CLICK HERE	
8 VK2TDS IMSG Are You The(1074285666V/NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 9 VK2TDS IMSG DDDDDDDDDD1074285622V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG CCCCCCCC01074262617V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BBBBBBBBE1074285612V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG AAAAAAAA41074262607V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG AAAAAAAA41074262607V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE	6	VK2TDS		TextBox6	1074510581∨	NOT DONE	ADD JOB	225	Reassign	Delete	CLICK HERE	
9 VK2TDS IMSG DDDDDDDDD 1074262622V NOT DONE ADD J0B ??? Reassign Delete CLICK HERE 10 VK2TDS IMSG CCCCCCCC1074262617V NOT DONE ADD J0B ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BBBBBBBBC1174262612V NOT DONE ADD J0B ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG AAAAAAAA1074262607V NOT DONE ADD J0B ??? Reassign Delete CLICK HERE	7	VK2TDS	IMSG	Are You Ther	1074324227∨	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE	
ID VK2TDS IMSG CCCCCCCC1074262617/ NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 11 VK2TDS IMSG BBBBBBBE1074262612/ NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG AAAAAAAA1074262607/ NOT DONE ADD JOB ??? Reassign Delete CLICK HERE	8	VK2TDS	IMSG	Are You Ther	1074285666	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE	
II VK2TDS IMSG BBBBBBBE1074262612V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE 12 VK2TDS IMSG AAAAAAAA 1074262607V NOT DONE ADD JOB ??? Reassign Delete CLICK HERE	9	VK2TDS	IMSG	DDDDDDDC	1074262622	NOT DONE	ADD JOB	777	Reassign	Delete	CLICK HERE	
12 VK2TDS IMSG AAAAAAAA11074262607V NOT DONE ADD JOB <u>???</u> Reassign Delete CLICK HERE	10	VK2TDS	IMSG	00000000	1074262617V	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE	
	11	VK2TDS	IMSG	BBBBBBBBB	1074262612	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE	
13 VK2TDS IMSG XXXXXXXX1074262601VNOT DONE ADD JOB ??? Reassign Delete CLICK HERE	12	VK2TDS	IMSG	AAAAAAAA	1074262607	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE	
	13	VK2TDS	IMSG	********	1074262601	NOT DONE	ADD JOB	222	Reassign	Delete	CLICK HERE	

My Jobs List Screen

-g	From	То	Jobs My Job C Message	ID	Expiry Date	ACK?	Accept	Decline	Done	Action	_
1	VK2TDS	IMSG	RE:This is a				Accept	Decline	Done	CLICK HERE	
	VK2TDS	IMSG	RE:11111111				Accept	Decline	Done	CLICK HERE	
3	VK2TDS	IMSG	RE:This is a				Accept	Decline	Done	CLICK HERE	
4	VK2TDS	IMSG	RE:This is a				Accept	Decline	Done	CLICK HERE	
5	VK2TDS	IMSG	aaqaaqaaa	1074510597	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
6	VK2TDS	IMSG		1074510581			Accept	Decline	Done	CLICK HERE	
7	VK2TDS	IMSG	Are You Ther	1074324227	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
8	VK2TDS	IMSG	Are You Ther	1074285666	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
9	VK2TDS	IMSG	DDDDDDDD	1074262622	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
0	VK2TDS	IMSG	00000000	1074262617V	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
1	VK2TDS	IMSG	BBBBBBBBB	1074262612V	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
12	VK2TDS	IMSG	-	1074262607V	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
13	VK2TDS	IMSG	********	1074262601	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	

Job Request Screen



P2P Message Entry Screen



Outgoing Message Queue Screen

le	Setup										
		Bin Lift All In	he My Joh C		Liob Beque	ot P2P IV	ohiclos All II	outanini	g Message Queue	1	
ogin	From		Message		Expiry Date		DEL	5613	,	.8	
1	IMSG			20040123040		AGA	Delete				
-					-		001010				-
											•
											Þ
	Connected	Clear L									×

Bin Lift Screen



OziAPRS & OziExplorer



Mobile Data Terminal Operations



Concepts

There are two main types of information sent to the Mobile Data Terminal (MDT), and it is important to recognize the difference between these types of messages. The two types of messages are "Jobs" and "Person to Person (P2P) Messages".

Jobs can only be assigned from the server, whilst P2P Messages can be initiated from either end.

Incoming Messages

When a message comes in to the MDT, the RED light labeled "MSG" will flash. This is an indication to the user that there is a message that has not been acted on.

For a Job, there are two actions that can take place. They are Accept the Job, or Decline the Job. If the user Accepts the Job, the job is then placed into a queue of jobs to be closed at a later date, usually with a bin lift. If the job is declined, the MDT sends a message back saying that it has been declined, and the user has nothing more to do with that job.

With messages, there are two (three) possible actions. The first is "OK" says to the MDT that the user is no longer interested in this message, and that it can delete the message.

Pressing Archive tells the MDT that the user has read the message, but not to delete it yet.

Reply allows the user to reply to the person who sent the message.

Lights and Icons

There are two lights, and three icons on the screen.

Red Light

A flashing red light means that there is an incoming message that has been received, that has not been acknowledged in any way.

Green/Yellow Light



A green/yellow light means that there are messages in the MDT that have yet to been successfully received by the server. Because position reports are sent each minute, this light will come on at least momentarily every minute. If this light stays on it means that messages will not be seen by the server.

GPS Icon



The GPS icon means that the GPS is operating correctly, and has located enough satellites to determine its position.

01/10 Icon



The 10/01 lcon means that the unit believes that it is in contact with the server. Because of the operation of GPRS, there will be cases where the 10/01 icon is lit, but there is no real connection. In such a case the icon will go out after a couple of minutes.

Job Flowchart







Bin Lift

Press the JOBS (F2) key, and rotate the dial CLOCKWISE until the message 'New Job' appears on the screen.



Once 'New Job' is selected, press the 'ENT' key. You can then enter the BIN NUMBER.



Enter the BIN NUMBER and press 'ENT' when finished. You will then be asked for the condition of the bin.



Use the dial to select the correct option and press the 'ENT' key. Once you have done this, you will be returned to the JOBS menu.



Message Menu





Control Screen



The control screen contains a number of functions that are useful for changing the personality of the unit, and for debugging. They are functions that are not normally needed, but can be accessed as required.

The functions that are presently implemented include

- Changing the Backlight Level
- Examining the GPS signals
- Examining the flow of messages to the server.

Telephone

The phone in the Net960 uses a Cellphone, and therefore can only operate when in cellphone range.

Access Control

The access control for the telephone sub-system is based on levels of access. Each level of access is by design includes all the privileges of the lower levels. Each phone number in the phonebook on the MDT is also given a level. This allows different phone numbers to be rung depending on who is dialing.

The default level of access is defined as 1, allowing all incoming phone calls, and any level 0 and level 1 phone numbers to be dialed. Level 0 is reserved for times when there are to be no incoming calls answered, and only any numbers on the level 0 list may be dialed.

Access of level 9 also allows any phone number to be dialed on the keypad.

Tasks

Adding New Vehicles

New vehicles need to be added periodically. These vehicles need to be added to the database in order to operate correctly. The following fields need to be added

- Vehicle Number
- Vehicle Registration
- Vehicle Callsign
- Vehicle Phone Number
- Vehicle Last Driver Number

The vehicle number is a short number used internally by the software – and must be unique. The vehicle registration is the license plate of the vehicle in Upper Case. The Callsign is also commonly also the license plate, but can be any 3-8 character identifier for the vehicle. The phone number field is only for reference to act as a phone book. The Vehicle Last Driver field is used by the software internally.

To add a new vehicle

- Start iServ
- Select the Update | Vehicle Details menu
- Enter Password when asked
- Select the Vehicles TAB in iServ
- Add a new entry as required, ensuring that the cursor leaves the line following the addition
- Select the Update | Vehicle Details menu once more to save the changes
- Check to make sure that the changes have worked.

File	Network D	atabase	Servers Re	efresh	Update	Help	Test
Co	nnections Ve						
	VehicleNu	Vehicle	Reg VehicleC	all Ve	 Vehic 	le Detai	S
	1	TEST2			Drive	r Details	s
	2	ACL52H	VK2TDS	0412	929 6	(null)	
	3	AFF434	VK2XSB	(null))	(null)	
	4	YAE148	M110-1	(null)	(null)	

Adding translations from Net960 Serial Numbers to Callsigns

By default the Net960 units use their own serial number when communicating with the iServ system. This is not what the users commonly required. A database translation table has been created to convert from the serial number into an easier to recognize string.

Two entries are required – the Hardware Address which is the six digit serial number, and the Callsign, which is commonly the registration plate.

To add an entry in the translation table

- Start iServ
- Select the Update | Hardware Addresses menu
- Enter Password when asked
- Select the Callsigns TAB in iServ
- Add a new entry as required, ensuring that the cursor leaves the line following the addition
- Select the Update | Hardware Addresses menu once more to save the changes
- Check to make sure that the changes have worked.

6	i) iS	erv - Radio	active Netv	works				
E	ile	Network Da	atabase <u>S</u> er	vers <u>R</u> ef	iresh	Update	Help	Test
	Con	nections Ve	hicles Users	Events	Pass	🖌 Hardw	vare Ad	dresses
		HardwareA	Callsign			Vehicl	e Detail	s
	•	350030950	M110-1			Driver	Details	5
		310917	310917					
		123456	123456					
		311539	311530					
		IMSG	IMSG					
		ISERVD	ISERVD					

Adding Users and changing PIN numbers

One of the most common tasks inside the database is to Add users, and to change PIN numbers, and the phone access. The fields in the database include

- Driver Number
- Driver Name
- Phone Access Level
- Driver PIN number
- Driver Display Name

ile		atabase Se	and the second second second	anone of a second second	a contraction contraction
Cor	nnections Ve	hicles User	s Events F	assthrough	Text Callsigns Outgoing Messag
	DriverNum	DriverNam	DriverPhon	DriverPIN	DiverDisplayName
•	0	TEST	1	111	A. User
	1	TEST2	2	222	J. Doe
	2	VK2TDS	3	333	D. Smith
	3	ISERV	4	444	S. Gonzales
	4	310917	3	555	M. Mouse
	5	EL-1	4	666	A. Test
	6	AAA	1	777	C. Janeway
-	7	BBB	1	888	J. Picard
	8	IMSG	1	999	P. Bear
	9	ISERVD	1	000	Gus
	11	KevinD	1	123	Kevin Dawson
	14	315318	1	90901	test
	15	315307	1	1	test2
	16	ACL52H	1	9289	Darryl

The driver number is a unique short number. The Driver Name should be unique, and MUST be identical to the Callsign in the Callsign translation table. The Driver Phone Access Level defines what capabilities the phone has once the user logs in. It is described elsewhere. The PIN number is a series of numbers that must be unique, since it is used as a login ID. The Display Name is the string shown on the screen when the user logs in.

- Start iServ
- Select the Update | Driver Details menu
- Enter Password when asked
- Select the Users TAB in iServ
- Add a new entry as required, ensuring that the cursor leaves the line following the addition
- Select the Update | Driver Details menu once more to save the changes
- Check to make sure that the changes have worked.

Database

Introduction

The database contains information on all th

Database Tables

Table DriverDetails HardwareCallsigns Jobs LatestPositions MessageMode Messages MessageType PhoneMode Positions VehicleDetails Description

List of IMEI's List of open Jobs List of current positions Type of message – P2P or to iServ List of all messages including Jobs Packet Types list Access levels on phone List of all positions

Network Architecture

The iServ product suite operates using TCP/IP, Windows File Sharing and Microsoft Access. The exact interface depends on the particular operation being performed.

TCP/IP Ports

A number of TCP/IP ports are used for this application, depending on the type of device connecting to the application. The ports include

Port 5001 Port 8001 Port 80 iMessage and OziAPRS clients Net960 and M110 NetGPS

Port 5001 for iMessage and OziAPRS Clients

Port 5001 is used for communications between iServ and the iMessage and OziAPRS client software. The iMessage and OziAPRS client software connects to the iServ server on this port in order to exchange messages of various types.

On connecting, iServ sends a series of messages to the client with the last recorded positions of all the mobile stations.

Port 5001 is designed to be used on a high bandwidth link (modem, Ethernet, broadband). Several of the messages could potentially overload a low bandwidth radio link.

Clients connected to port 5001 should see all data sent or received on this port by other clients, as well as all data on port 8001.

Port 8001 for Net960 and M110 units

Port 8001 is designed to operate with GPRS units in the field. Incoming data is massaged into a format that is common to other parts of the iServ system. The incoming data has a Callsign added if it does not have one already.

An important feature of port 8001 is that upon connection, any connections to this port from other clients using the same Callsign are immediately disconnected. This is to remove the possibility of a 'Denial Of Service' attach on this port, from connections to this port without a resulting session. These type of connections are common on the GPRS network as a way to handle the mobile IP environment.

Port 80 for NetGPS

The iServ software is able to add a small HTTP server on Port 80 for the specific purpose of allowing connections from the NetGPS PC and PDA software. NetGPS allows uploading GPS data in real time from a PDA in the field using the HTTP protocol.

Protocol

The iServ protocol is a modified version of the APRS protocol developed by Bob Bruninga in the USA. The iServ, iMessage and OziAPRS software support most of the position reporting formats in APRS.

Radioactive Networks have extended the APRS protocol to allow highly robust messaging formats, by implementing a sub-class in the User-Defined area of the protocol.

Within this User-Defined area, a number of message types have been defined.

#INCLUDE PROTOCOL DETAILS HERE

iServ Component Interactions



Backups of Data

In an application like this, reliable backups are vitally important. The backups should be done daily or weekly depending on business needs.

Backup of XML Files

The XML files contain the same data that can be found in the database. As such they provide a backup in case the entire database gets corrupted.

- 1. Shut down iServ
- 2. Move any files from C:\Program Files\iServ\XML\Errors to C:\Program Files\iServ\XML\Upload
- 3. Once the files have been processed, close iLog
- 4. Backup all the files in C:\Program Files\iServ\XML\Done
- 5. Optionally, ZIP all the files in C:\Program Files\iServ\XML\Done and move them to CD-ROM
- 6. Optionally, ZIP the files in C:\Program Files\iServ\XML\Errors if there are any and sent them to Radioactive Networks for Analysis
- 7. Restart iLog and iServ

Backup of Database File

The database file should be backed up periodically to ensure system availability.

- 1. Shut down iServ and iLog
- 2. Backup any files in C:\Program Files\iServ\Database
- 3. Restart iServ and iLog

Startup of PC

- 1. Start the Internet connection
- 2. Start iLog from Start Menu
- 3. Start iServ from Start Menu
- 4. Start iMessage from Start Menu
- 5. Start OziExplorer from Start Menu
- a. Load any map required6. Start OziAPRS from Start Menu
 - a. Connect to Server from OziAPRS menu





Something is not working

No vehicle positions are showing up

Is the internet connection running?

PC Application Training

There are a number of areas that need to be trained on the PC Application. They are

- a) Starting up the software
- b) Using the iMessage application
- c) Using the OziAPRS application
- d) Using the OziExplorer application
- e) Back end reporting (requires Microsoft Access)

Hardware Install

Mercedes Sprinter

9dB Magnetic Cellular antenna

GPS Antenna



