# **Radioactive Networks**



# iServ System Manual Version 0.0.3

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## 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
		Mandatan
	512 MDytes RAM	Mandatory
	Internet Access with Permanent IP	Mandatory
	address	
	Microsoft Access	Optional
Messaging	PC running Microsoft Windows 2000	Mandatory
and	or Windows XP	
Reporting		
Station		
	256 Mbytes RAM	Mandatory
	Microsoft Access	Recommended
Position	PC running Microsoft Windows 98 or	Mandatory
Monitoring	better	5
Station		
	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.

\_\_\_\_<sup>\_</sup>\_\_\_\_<sup>\_</sup>\_\_\_\_

#### 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 <a href="https://www.gpsoz.com.au">www.gpsoz.com.au</a>

#### 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**

1	vetwork Da	atabase Ser	vers Refre	ish Help	
oni	nections [Vel	hicles Users	s Events F	Passthrough T	Text Callsigns Outgoing Message Queue Test1 Test2
	VehicleNu	VehicleReg	VehicleCall	VehiclePho	
	0	TEST	NULL	(null)	
	1	TEST2	VK2XSB-1	(null)	
	2	ACL52H	VK2TDS	0412 929 6	
	3	AFF434	VK2XSB	(null)	
	4	YAE148	M110-1	(null)	
	5	XLZ123	VK2XLZ	(null)	
	6	ISERV	ISERV	(null)	
	7	iuidsf	310917	(null)	
	8	dsffidi	DEST	(null)	
	9	EL-1	EL-1	(null)	
	10	123456	123456	(null)	
	11	311530	311530	(null)	
	12	IMSG	IMSG	(null)	
	13	ISERVD	ISERVD	(null)	
0.1	MSGNSERV	111@310917	MSG 2004	0123040436+	This is a message for non-fussy neonle

#### **Users List Screen**

15	erv - Radio	active Net	works								
9	Network Da	atabase Ser	vers Refre	sh Help							
Con	nections Ve	hicles User	Events F	assthrough Tex	Callsigns	Outgoing	Message Qu	ueue Test1	Test2		
	DriverNum	DriverNam	DriverPhon								
•	0	TEST	1								
	1	TEST2	2								
	2	VK2TDS	1								
	3	ISERV	1								
	4	310917	1								
	5	EL-1	1								
	6	123456	1								
	7	311530	1								
	8	IMSG	1								
	9	ISERVD	1								

## Pass-through Text Screen

ie Network Database Servers Refresh Help	
Vehicle User Events Feasthrough Text Callsigns Outgoing Message Queue Test2   Line:310017x15ERV-UIISISERV 310017 20040123050628 20040123050628 15052049E34007205000000 Line:MSG)ISERV/UIISISERV 310017 20040123050642 20040123050628 1505205E34007205000000   Line:310017x15ERV-UIISISERV 310017 20040123050642 20040123050645 1505205E34007215000000 Line:MSG)ISERV/UIISISERV 310017 20040123050443 20040123050614 20040123050614 20050E340072150000000   Line:310017x15ERV-UIISISERV 310017 20040123050712 00040123050714 20040123050711 500250E340072150000000 Line:310017x15ERV-UIISISERV 310017 2004012306073 20040123050711 505205E3400712 50000000   Line:310017x15ERV-UIISISERV 310017 20040123060734 20040123050711 505205E3400714 50000000 Line:310017x15ERV-UIISISERV 310017 20040123060734 20040123050711 505205E3400714 50000000   Line:MSG)SEERV-UIIG310017 10040123060715 20040123050751 1505205E340071450000000 Line:MSG)SEERV-UIIG310017 100401230500750 200401230500075150205E340071852000000 Line:MSG)SEERV-UIISISERV 310017 200401230500750 200401230500075150205E3400718520000000 Line:MSG)SEERV-UIISISERV 310017 20040123050082 200401230500875150205E3400718520000000 Line:MSG)SEERV-UIISISERV 310017 20040123050082 2004012305008241505205E3400715520000000 Line:MSG)SEERV-UIISISERV 310017 200401230500857 20040123050085715052054E340071650000000 Line:310917x15ERV-UIISISERV 310017 2	

#### **Callsign List Screen**

. 1		1 - 1			In a local		a far a	. 1		
onnections   Ve	hicles   Users	Events	Passthrough Te	ext Calisigns	Outgoing Mess	age Queue   Ti	est1   Testa	2		
HardwareA	Callsign									
871487389	VK2ABC									
787878834	VK3AH									
204160402	VK2TDS									
784375878	VK2XSB-1									
998910903	VK2XLZ-4									
777283499	VK2AAA									
909493878	VK4SX									
248498499	VK2SS									
998439800	VK8JS									
228439800	VK1SDF									
123489348	VK3SB									
410934900	NOCALL									
350030950	M110-1									
310917	310917									
123456	123456									
311539	311530									
IMSG	IMGS									
ISERVD	ISERVD									

#### **Outgoing Message Queue Screen**



#### **Latest Positions Screen**

	Database	Comusero F	) officially	Liebe Teel			
onnections	Vehicles	Users Event	ts Pass	through Text	Callsigns	Outgoing Message Queue	Positions Test2
Callsig	n Lat	Lon	Alt	Spd H	ldq	Date/Time	
1 310917	-34.012	150.8673	0	0	0	22/02/2004 9:04:47 PM	
2 315319	-34.0121	6 150.8673	0	0	0	22/02/2004 9:04:02 PM	
3 315318	-34.012	150.8675	0	0	0	21/02/2004 7:28:15 AM	

## iLog

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

\_

22/01/2004 12:34:27 AM - Position 22/01/2004 12:34:42 AM - Position 22/01/2004 12:35:14 AM - Position 22/01/2004 12:35:30 AM - Position 22/01/2004 12:35:45 AM - Position	
22/01/2004 12:36:17 AM - Position 22/01/2004 12:36:33 AM - Position 22/01/2004 12:36:48 AM - Position 22/01/2004 12:37:04 AM - Position 22/01/2004 12:37:20 AM - Position 22/01/2004 12:37:36 AM - Position	

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.

- 1	Even	Erem Lines	TaVahiala	Teller	Manager	Massage	Villen	Million Lat	Mare Lev	0.000	Antina	ManCan	Le le ID
1		From Oser	IMSG	TUOSEr		DE:This is a	23/01/2004 /	venere - Lau	where - Lon	Open r	Action	20040123040	107452800
	VK2TDS	1	IMSG		ADD JOB	BE:11111111	23/01/2004 4					20040123040	10745153
	VK2TDS		IMSG		ADD JOB	RE:This is a	23/01/2004 4					20040123040	10745152
-	VK2TDS	-	IMSG		ADD JOB	BE:This is a	23/01/2004 4					20040123040	10745149
	VK2TDS		IMSG		ADD JOB	aaaaaaaaaaa	23/01/2004 4					20040123040	10745105
	VK2TDS		IMSG		ADD JOB	TextBox6	23/01/2004 4					20040123040	10745105
	VK2TDS		IMSG		ADD JOB	Are You Ther	23/01/2004 4	6				20040123040	10743242
	VK2TDS		IMSG		ADD JOB	Are You Ther	23/01/2004 4	6				20040123040	10742856
	VK2TDS		IMSG		ADD JOB	DDDDDDDD	23/01/2004 4					20040123040	10742626
1	VK2TDS		IMSG		ADD JOB	cccccccc	23/01/2004 4	6				20040123040	10742626
	VK2TDS		IMSG		ADD JOB	BBBBBBBBB	23/01/2004 4					20040123040	10742626
2	VK2TDS		IMSG		ADD JOB	АААААААА	23/01/2004 4					20040123040	10742626
3	VK2TDS		IMSG		ADD JOB	********	23/01/2004 4	:				20040123040	10742626
1	ISERV		IMSG		Add User	ISERVD	23/01/2004 4					20040123040	
5	ISERV		IMSG		Add User	IMGS	23/01/2004 4					20040123040	
5	ISERV		IMSG		Add User	311530	23/01/2004 4					20040123040	
,	ISERV		IMSG		Add User	123456	23/01/2004 4					20040123040	
3	ISERV		IMSG		Add User	310917	23/01/2004 4	1				20040123040	
3	ISERV		IMSG		Add User	M110-1	23/01/2004 4					20040123040	
)	ISERV		IMSG		Add User	NOCALL	23/01/2004 4					20040123040	

#### All Jobs List Screen

iM	essage Cli	ent										_ 🗆 🗙
File S	Setup											
Login	Live Data	Bin Lift All	Jobs My Job Q	ueue Users	Job Reque	st P2P	/ehicles All U	sers Outgoin	g Message	Queue		
	From	То	Message	ID	Expiry Date	ACK?	222	Reassign	???	Action		<b>^</b>
1	VK2TDS	IMSG	RE:This is a	1074528092	NOT DONE	ADD JOB	222	Reassian	Delete	CLICK HERE		
2	VK2TDS	IMSG	RE:11111111	1074515352∨	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE		
3	VK2TDS	IMSG	RE:This is a	1074515203	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE		
4	VK2TDS	IMSG	RE:This is a	1074514915∨	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE		
5	VK2TDS	IMSG	ddddddddc	1074510597∨	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE		
6	VK2TDS	IMSG	TextBox6	1074510581∨	NOT DONE	ADD JOB	255	Reassign	Delete	CLICK HERE		
7	VK2TDS	IMSG	Are You Ther	1074324227∨	NOT DONE	ADD JOB	777	Reassign	Delete	CLICK HERE		
8	VK2TDS	IMSG	Are You Ther	1074285666	NOT DONE	ADD JOB	777	Reassign	Delete	CLICK HERE		
9	VK2TDS	IMSG	DDDDDDDC	1074262622V	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE		
10	VK2TDS	IMSG	CCCCCCCCC	1074262617∨	NOT DONE	ADD JOB	???	Reassign	Delete	CLICK HERE		
11	VK2TDS	IMSG	BBBBBBBBE	1074262612\/	NOT 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	225	Reassign	Delete	CLICK HERE		
•												•
	Connected	Clea	ar Live									

#### My Jobs List Screen

ogin	Live Data	Bin Lift   All	JODS My JOD G	idede   Users	Job Heque	st P2P V	enicles   All U	sers   Outgoin	g Message (	Jueue	
1	From	To	Message	ID	Expiry Date	ACK?	Accept	Decline	Done	Action	
1	VK2TDS	IMSG	RE:This is a	1074528092	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
2	VK2TDS	IMSG	RE:11111111	1074515352	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
3	VK2TDS	IMSG	RE:This is a	1074515203	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
4	VK2TDS	IMSG	RE:This is a	1074514915	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
5	VK2TDS	IMSG	ddddddddc	1074510597	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
6	VK2TDS	IMSG	TextBox6	1074510581	NOT DONE	ADD JOB	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	1074262622V	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
10	VK2TDS	IMSG	00000000	1074262617	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
11	VK2TDS	IMSG	BBBBBBBBB	1074262612V	NOT DONE	ADD JOB	Accept	Decline	Done	CLICK HERE	
12	VK2TDS	IMSG	АААААААА	1074262607	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**

🔚 iMessage Client	
File Setup	
Login Live Data Bin Lift All Jobs My Job Queue Users Job Request P2P Vehicles All Users Outgoing Message Queue	
From To Message ID Expiry Date ACK? DEL	<u>▲</u>
1 IMSG 310917 IMSG31SERV20040123040.0 Delete	-
Connected Clear Live	

#### **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.

i	iServ	- Radi	oactive	Networl	ks					
FI	e Net	work E	Database	Servers	Refre	sh	Update	Help	Test	
	Connec	tions V	ehicles	Users   Ev	ents   F	Pass	Harc	lware Ac	idresses	30
Γ	Vehicle		u Vehicle	Reg Vehi	cleCall	Ve	🗸 Vehi	de Detai	ls -	
	1		TEST2	VK2×	SB-1	(nul	Driv	er Details	s	- 1
	2		ACL52	H VK2T	DS	0412	929.6	(null)		-
	3		AFF434	4 VK2×	SB	(null)	0	(null)		
	4		YAE14	8 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			Vehicle Details				
	•	350030950	M110-1			Driver	Details			
		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	Network Da	atabase Se	rvers Refre	sh Update	e Help Test
Cor	nnections Ve	hicles User	s Events F	assthrough	Text   Callsigns   Outgoing Messar
	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



