SIMRAD

BRPC

Process update

06 March 2017



Section 1

What is BRPC

Glossary and Terms

Term	Meaning	Further Explanation
SDK	Software Development Kit	https://en.wikipedia.org/wiki/Software_development_kit
Software Libraries	PDF Files with information detailing how to implement radar protocol & communication	https://en.wikipedia.org/wiki/Library_(computing)
LL1	BRPC UNLOCK KEY - LL1	Unlock key level to open basic radar features
LL2	BRPC UNLOCK KEY - LL2	Unlock key level to open advanced radar features
Partner	Approved BRPC Customers	Will have associated BRPC customer number, e.g. BRPC123
Mutual NDA	Mutual Non Disclosure Agreement	Legal Document protecting the IP of both parties
SDKLA	SDK License Agreement	Document listing terms and conditions of use of the SDK documentation

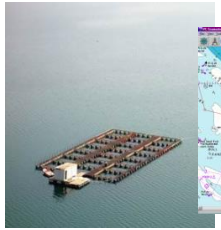
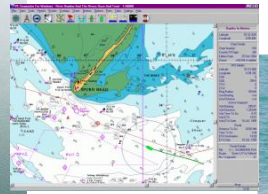
What is BRPC

- **BRPC is a SDK incorporating 2 levels of PC software libraries (LL1 and LL2), that will allow developers (partner companies) to develop applications to receive and manipulate Navico radar data on a PC platform and without the need of a Navico display.**
- **The BRPC SDK contains software libraries that allows partner companies to develop their own software that will allow Navico radar integration within their own systems.**
- **We have many partners developing applications to take advantage of the unique properties of Navico 3G, 4G, Halo & 12kw SRT LAN Radar. These applications range from Marine charting customers, Land/Sea Security, Military use (stationary and moving), River Navigation, Boundary Surveillance monitoring, Fish Farm applications, unmanned vessels & vehicles, PC Charting to Oil Rig ship docking.**
- **BRPC is NOT a software program to allow a Navico radar to be viewed and controlled from a PC. It is a toolkit, not software.**

Potential Markets

- **Marine**

PC Charting/Navigation programs
Integration into ECDIS/Bridge systems
Robotic and unmanned vessels
Oil Rigs
Fish Farms/Aquaculture
VTS applications “cellular VTS”
Blind spot radars/watch radars, single or multi



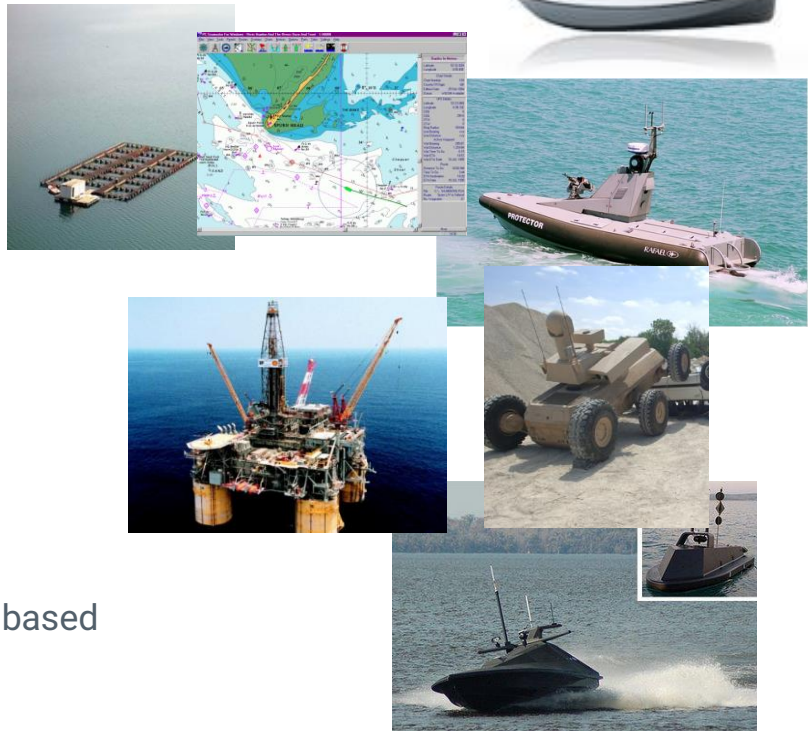

- **Non Marine**

Military use, stationary and moving, land or sea based
Boundary surveillance

Available Transceivers

- 3G FMCW Broadband Radar Domes
- 4G FMCW Broadband Radar Domes
- Halo Pulse Compression Open Arrays, 3, 4 & 6ft
- 12kw SRT LAN Magnetron Radar (6ft)

Potential Markets



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Process & Costs

How do I obtain BRPC?

Process Overview

1. Find the partner and asses for suitability
2. Send the partner introductory documents
3. If partner clearly understands BRPC , and believes they have the capability to work with the SDK with minimal support, then the partner signs an NDA (Non disclosure agreement), completes a survey questionnaire, and signs a Software License Agreement (SDKLA)
4. Partners application is assessed by Navico Product Line Directors & senior management.
5. Upon approval Navico R&D can then send the libraries to the partner

Process can take up to 2-3 weeks.

Cost

- Libraries will be provided F.O.C (free) to partners that have signed an NDA and SDK License agreement with Navico
- Customer will have to purchase a radar for development.
- Each radar will then have to be unlocked, there are two levels depending on application, LL1

- The unlock code pricing per radar is a one-time charge i.e. not an annual charge
- Technical Support will be provided to assist the Developer with using the BRPC SDK at a standard hourly charge out rate of

FAQ’s & Further info

FAQ's*

Question	Answer
Is BRPC software to allow me to control a radar from a computer?	NO, it is an SDK, or software libraries containing radar protocol to allow partners to manipulate and view Navico radar from their own application.
Can I get RAW data from the radar?	Spoke data is processed by the radar internally. It is not possible to get truly raw radar data (video) from the radar but you can minimize the amount of processing the radar performs. This will require an LL2 unlock key. However, note: given the amount of specialized processing required we do not recommend this unless you already have expertise in this area. Minimizing the radar processing can be achieved by turning off spoke processing by the radar.
Does the SDK support ARPA or ATA?	The radars only support manual target acquisition (MARPA rather than full ARPA) – this means you must tell the SDK the relative location of the target you want the radar to track. Once the radar has recognized/acquired the target it will then track it and the SDK will periodically output the targets relative and absolute position (if an appropriate heading sensor is attached). A radar can track up to 10 targets per range (20 targets for a 4G and HALO with both ranges operating)
What are the radars data transfer requirements?	The radar output spokes at a rate of 2048 per revolution per range, with each spoke being 536 bytes long, and have a maximum rotation speed of 36 rpm (3G radar) or 48 rpm (4G and Halo radar) giving a worst case spoke data rate of 643.2 Kbytes/sec (~5.5Mbps) for 3G or 857.6 Kbytes/sec (~7.3Mbps) for 4G/Halo. The usual rate, using the default rotation speed of 24 rpm and a single range would be just 142.4 Kbytes/sec (~1.2Mbps). Some control and status data is also sent but this is insignificant compared to the spoke data.
Can I use Fixed IP Addresses?	There is no support for being able to set a fixed IP address on any Radar. By default a radar will use the zeroconf protocol to pick an IP address in the 169.254.x.x range, or if your network has a DHCP server you may apply a patch that will force the radar to use DHCP to allocate its IP address instead.

*Complete list of FAQ's are provided in the introductory documents

BR24 PC Part Numbers

Description	Part Number	Price USD
BRPC SOFTWARE DEVELOPMENT KIT	000-10172-001	
BRPC UNLOCK KEY - LL1	000-10173-001	
BRPC UNLOCK KEY - LL2	000-10174-001	
BRPC TECHNICAL SUPPORT BLOCK	000-10175-001	

For More Information……..

Navico BRPC Process Custodian

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