

Usando Bluetooth Serial Port Profile en JSE / JME

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- ¿Qué es Bluetooth ?
- Bluetooth profiles
- Vistazo a JME
- ¿Qué se puede hacer con JABWT (JSR-82) ?
- Implementación JSR-82 para JSE
- Serial Port Profile y RFCOMM
- Estableciendo conexión como cliente
- Estableciendo conexión como servidor
- Ejemplo en JSE como cliente
- Ejemplo en JSE como servidor



- Redes Inalámbricas de Área Personal (WPANs)
- Sustituir RS232
- Radiofrecuencia 2.4 GHz
- Clase : 1,2,3



- Lista de Bluetooth profiles
 - 1 Advanced Audio Distribution Profile (A2DP)
 - 2 Audio/Video Remote Control Profile (AVRCP)
 - 3 Basic Imaging Profile (BIP)
 - 4 Basic Printing Profile (BPP)
 - 5 Common ISDN Access Profile (CIP)
 - 6 Cordless Telephony Profile (CTP)
 - 7 Device ID Profile (DID)
 - 8 Dial-up Networking Profile (DUN)



- Lista de Bluetooth profiles
 - 9 Fax Profile (FAX)
 - 10 Generic Audio/Video Distribution Profile (GAVDP)
 - 11 Generic Access Profile (GAP)
 - 12 Generic Object Exchange Profile (GOEP)
 - 13 Hard Copy Cable Replacement Profile (HCRP)
 - 14 Hands-Free Profile (HFP)
 - 15 Human Interface Device Profile (HID)
 - 16 Headset Profile (HSP)



- Lista de Bluetooth profiles
 - 17 Intercom Profile (ICP)
 - 18 LAN Access Profile (LAP)
 - 19 Object Push Profile (OPP)
 - 20 Personal Area Networking Profile (PAN)
 - 21 Phone Book Access Profile (PBAP, PBA[1])
 - 22 Serial Port Profile (SPP)
 - 23 Service Discovery Application Profile (SDAP)
 - 24 SIM Access Profile (SAP, SIM)



- Lista de Bluetooth profiles
 - 25 Synchronisation Profile (SYNCH)
 - 26 Video Distribution Profile (VDP)
 - 27 Wireless Application Protocol Bearer (WAPB)



- Configurations
 - CDC (JVM)
 - Foundation Profile
 - Personal Profile
 - * Paquetes Opcionales
- CLDC (KVM)
 - MIDP
 - * Paquetes opcionales
 - JSR-82



- **Funcionalidad**

- Registrar Servicios
- Descubrir Servicios
- Establecer conexiones (RFCOMM, L2CAP y OBEX)
- Conducir las anteriores de manera segura

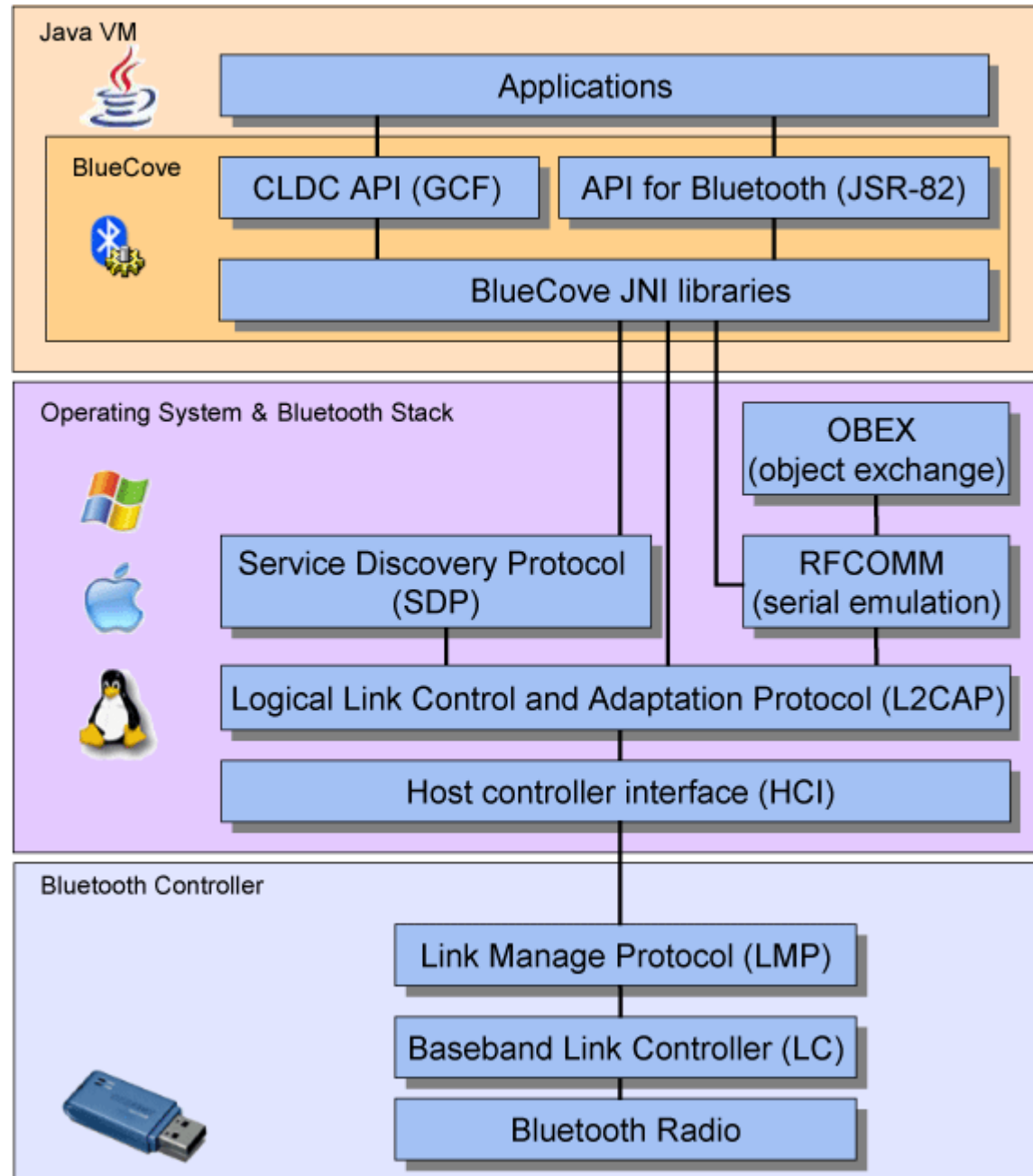
- **Protocols + Profiles**

- SDAP - Service Discovery Application Profile
- RFCOMM - Serial Cable Emulation Protocol
- L2CAP - Logical Link Control and Adaptation Protocol
- GOEP - Generic Object Exchange (OBEX) Profile



Name	javax.bluetooth Support	javax.obex Support	Java Platforms	Operating Systems	Price
Atinav	Yes	Yes	J2ME, J2SE	Win-32, Linux, Pocket PC	unspecified
Avetana	Yes	Yes	J2SE	Win-32, Mac OS X, Linux, Pocket PC	€25, free**
Blue Cove	Yes	Yes	J2SE	Win-32, Mac OS X, Linux, Pocket PC	free (LGPL)
Electric Blue	Yes	Yes	J2SE	WinXP SP2	\$15 USD
Harald	No	No	any platform that supports javax.comm	many	free
JavaBluetooth.org	Yes	No	any platform that supports javax.comm	many	free
Rococo	Yes	Yes	J2ME, J2SE	Linux, Palm OS	€2500 , free***





- Por búsqueda de Servicio

```
StreamConnection con = null;

DiscoveryAgent agent =
LocalDevice.getLocalDevice().getDiscoveryAgent();

String urlService = agent.selectService(
    new javax.bluetooth.UUID(
        "C111B11111111111AE1131111DF117112", false),
    ServiceRecord.AUTHENTICATE_ENCRYPT, false);

con = (StreamConnection) Connector.open(urlService);

output = conn.openOutputStream();

input = conn.openInputStream();
```



- Por dirección Bluetooth

```
StreamConnection con = null;
```

```
String urlBTAddress = "btspp://00037A181A52:1";
```

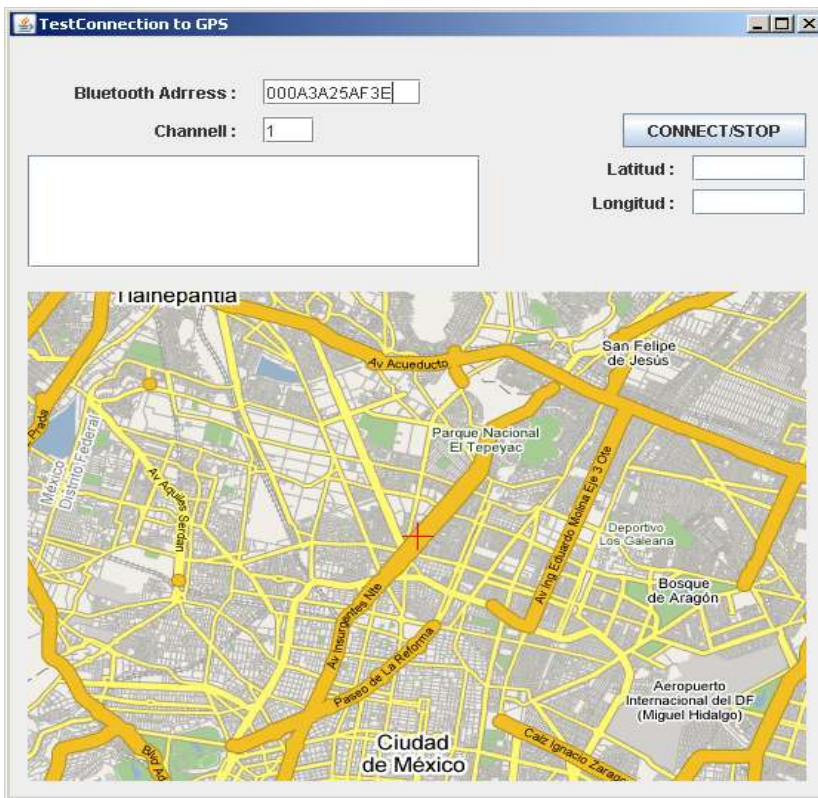
```
con = (StreamConnection)Connector.open(urlBTAddress);
```

```
output = conn.openOutputStream();
```

```
input = conn.openInputStream();
```



- Impresión directa
- Lectura de Antena GPS (NMEA-183)



Conclusión

- <http://www.jsr82.com/>
- <http://jcp.org/en/jsr/detail?id=82>
- <http://www.javablueetooth.com/>



Preguntas



“El poder de un lenguaje de programación reside en la libertad de expresión del programador”

Alfredo Estrada González, Julio 1998

