

# Telelogic and NewLogic present Bluetooth™ Protocol Stack in SDL

Partnership  
NewLogic



Bluetooth Wireless Technology is an open specification for the wireless communication of data and voice based on a low-cost, short-range radio link. Bluetooth enables laptops, cellular phones, headsets, PDAs and other types of portable devices to communicate with each other or with other appliances such as printers, desktop PCs, and fax machines without cables. Together with its partner NewLogic GmbH, Telelogic is providing a protocol stack in SDL for small embedded systems. The protocol stack is a part of NewLogic's BOOST™ product line and is developed and optimized for use together with Telelogic Tau™.

## Quality, Testability

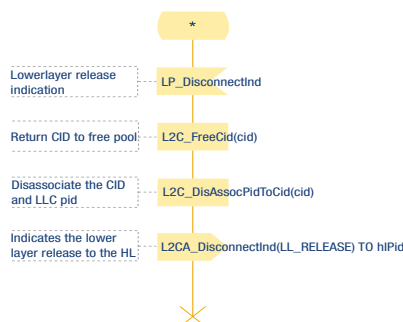
Most of the stack has been developed using SDL. This allows an improved simulation of each single layer and of the complete system. The SDL language also improves the readability

and the maintainability of the software, thus guaranteeing an easy evolution towards future standard modifications.

The SDL-code is optimized for low code-size and efficiency, and the benchmarks are comparable to stacks fully developed in C.

## Sample of SDL Code

Most of the system is designed in SDL. The diagram below is an excerpt from the L2CAP.

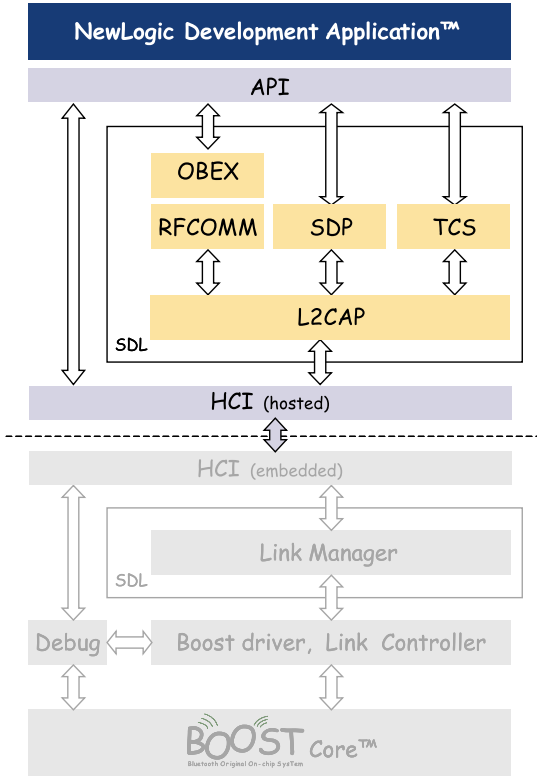


**Telelogic**

## Package description

Telelogic distributes the hosted part of the stack including HCI-interface, L2CAP, SDP, RFCOMM, TCS and OBEX. It is delivered in SDL and C source code.

Apart from this, NewLogic also provides the embedded part of the stack including LC and LM, and a "fully embedded" stack which is the host part and embedded part integrated on one chip with no HCI-interface.



### MAIN FEATURES

- Compliant to *Bluetooth* specification v1.0 B
- Designed in SDL and C
- Developed and validated for Arm™ processor, easily portable to another target processor.
- Support of piconet and scatternet operation in master and slave modes
- Support of *Bluetooth* low power modes (sniff, hold and park)
- Support of all packet types
- The number and the capability of the links can be customized, allowing optimization of the required RAM size.

## Bluetooth Profiles

The BOOST Software™ supports the requirements for the following profiles:

- Generic Access Profile
- Service Discovery Application Profile
- Cordless Telephony Profile
- Intercom Profile
- Serial Port Profile
- Headset Profile
- LAN Access Profile
- Generic Object Exchange Profile
- Object Push Profile
- File Transfer Profile
- Synchronization Profile

## Customization

- The stack can easily be ported to the most popular real-time Operating Systems (the O.S. is accessed through an O.S. abstraction layer).
- Porting to other processors is straightforward (16 or 32 bits processor recommended).

## Memory requirements

As outlined above the ROM and RAM size requirements are heavily dependent on the configuration selected. The values for a headset application are listed below.

- ROM requirements for the embedded part of a hosted stack (LC + LM + HCI + OS): 55 kbytes.
- RAM requirements for the same application (system memory, including stack, heap and message queues): 7 kbytes.
- ROM requirements for a fully embedded stack (LC + LM + L2CAP + RFCOMM + SDP + OS): 85 kbytes.
- RAM requirements for the same application: 10 kbytes.

## ABOUT NewLogic

NewLogic is a leading provider of intellectual property solutions and IC design services to the semiconductor and systems industries.

The company has 50 employees at its development sites in Lustenau, Austria, and Sophia Antipolis, France.

Besides protocol stacks, NewLogic develops wireless baseband and RF IP cores, the building blocks for high performance ICs for wireless markets such as Bluetooth and 3G.

NewLogic's customers are the leading companies in automotive, wireless and mobile consumer markets.

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