

Xavier Cauchy
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<http://LimiFrog.io>

Agenda

- Origins
- (Very) quick demo
- Users and usages
- Contents – hw and sw

Origins

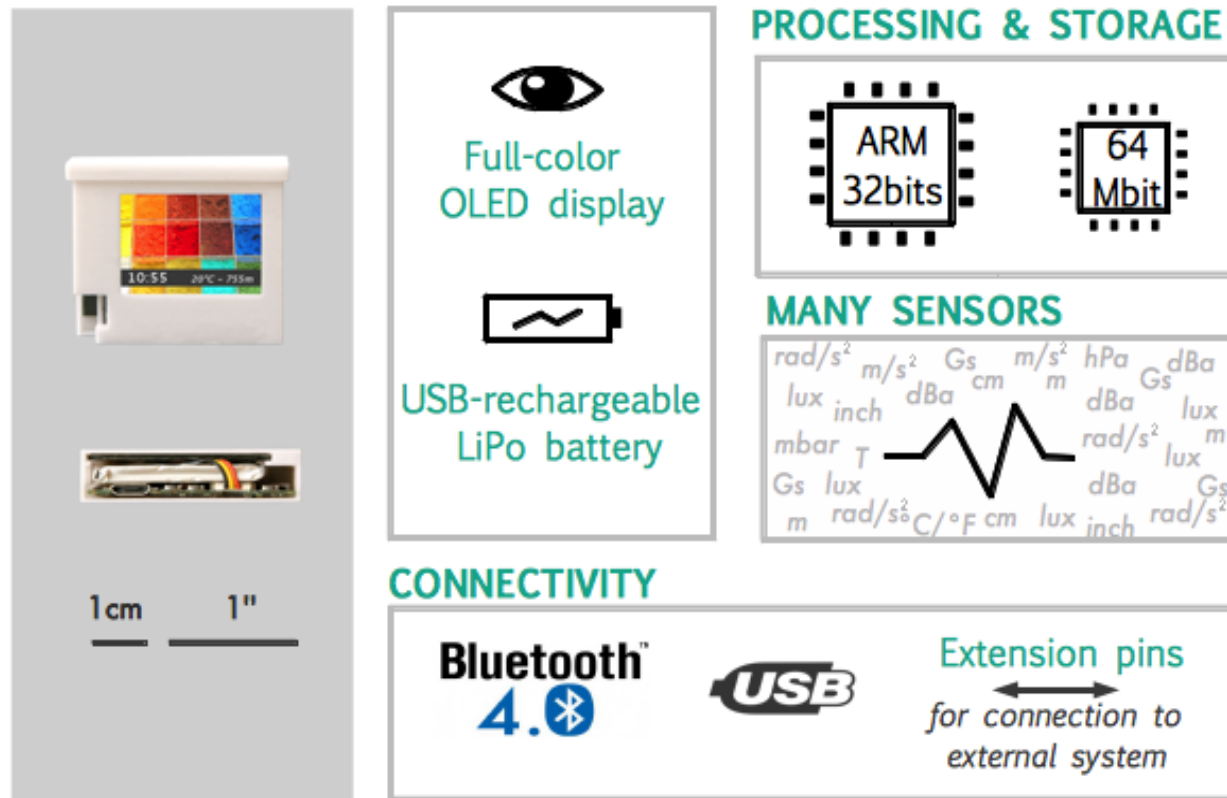


Product Idea :
a wearable
configurable
connected
device

Problem : how to get a credible,
decent-looking functional prototype ?

...Ended up with a platform that seemed worth sharing

What is it ? - Quick Demo



The image displays the LimiFrog device and its specifications. On the left, two views of the device are shown: a top view with a color display and a bottom view showing the internal components. Below the images are scale bars for 1 cm and 1 inch. The specifications are organized into four main categories:

- Full-color OLED display** (represented by an eye icon)
- USB-rechargeable LiPo battery** (represented by a battery icon)
- PROCESSING & STORAGE**: ARM 32bits processor and 64 Mbit storage.
- MANY SENSORS**: A central waveform icon surrounded by various sensor units including rad/s^2 , m/s^2 , Gs , cm , m/s^2 , hPa , dBa , Gs , dBa , lux , inch , mbar , T , rad/s^2 , lux , m , Gs , lux , dBa , Gs , m , rad/s^2 , C/F , cm , lux , inch , and rad/s^2 .
- CONNECTIVITY**: Bluetooth 4.0, USB, and Extension pins for connection to an external system.



For whom ?

*Start-up entrepreneurs,
Labs (industrial/academic)*



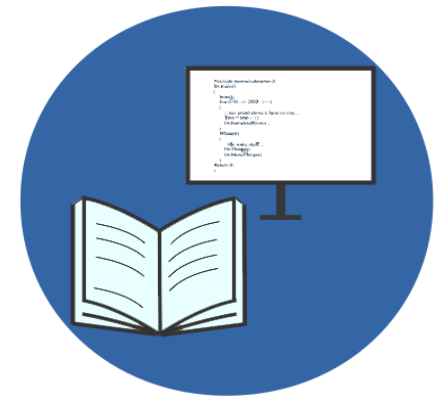
Convincing proofs of
concept with
minimal investment

'Makers'



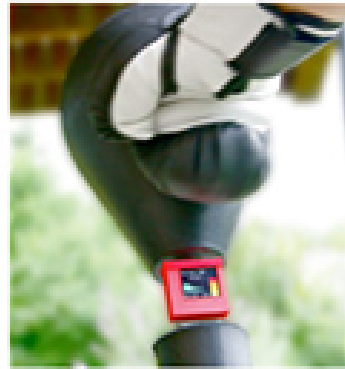
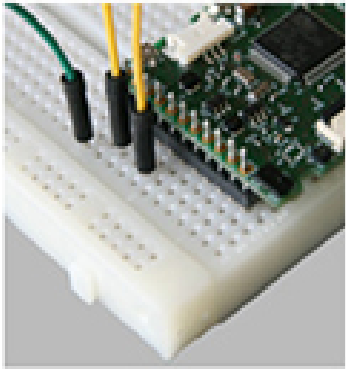
New possibilities for
original or ambitious
projects

Higher Education



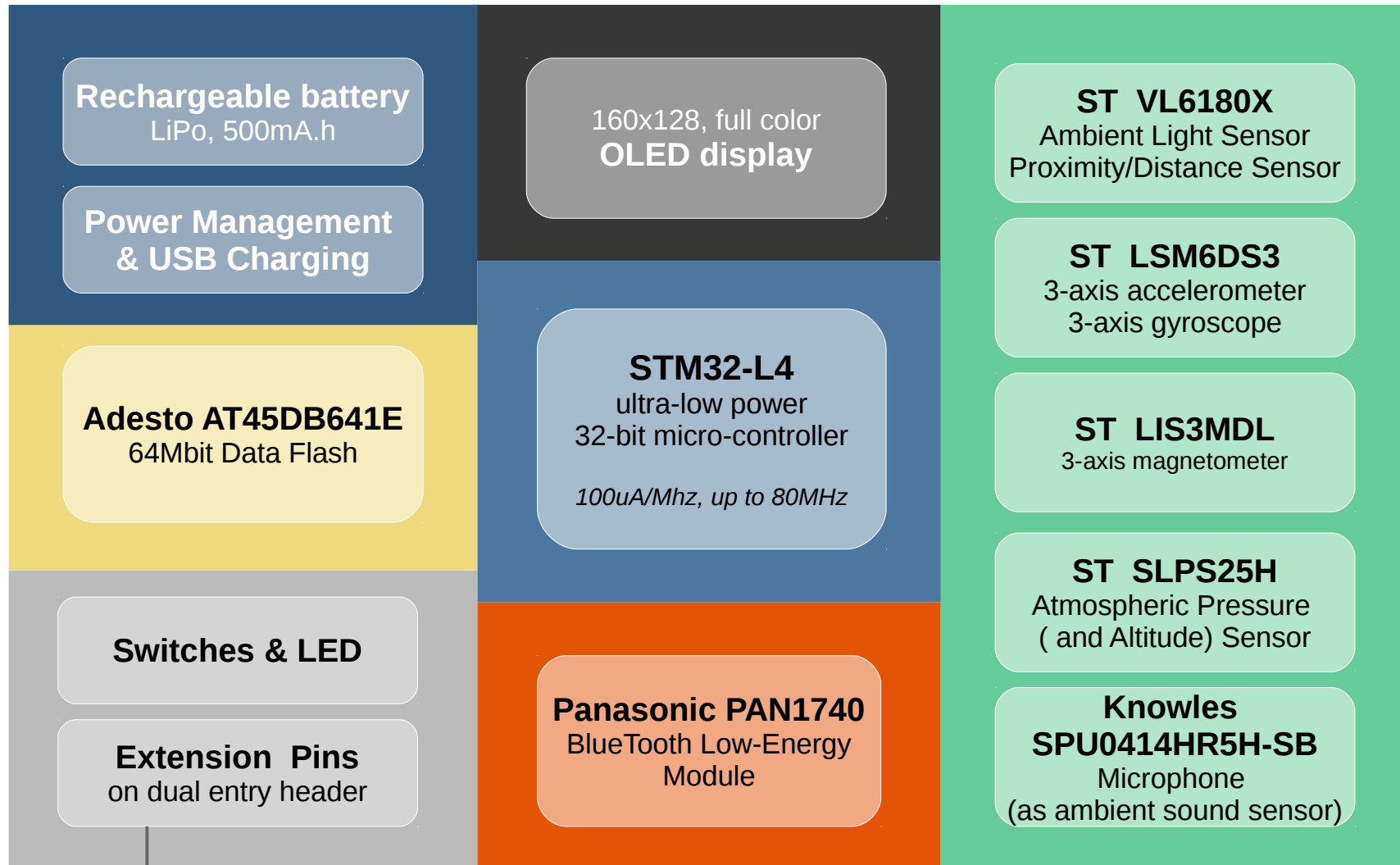
Single platform for
multiple projects +
smooth introduction to
ARM 32-bit programming.

Usages



- On breadboard or embedded in prototype
- With or without display
- 3D-printable model of protective case available, open-source (*STL, OpenScad*)
 - Several variants available
 - « Ready-made » 3D-printed case also available

Contents (hardware)



incl. GPIO, IRQ, I2C, SPI, U(S)ART, CAN, Timer/PWM, ADC, DAC, OpAmp

Software

Example application code is provided

- > Unitary Tests
- > Full Demos

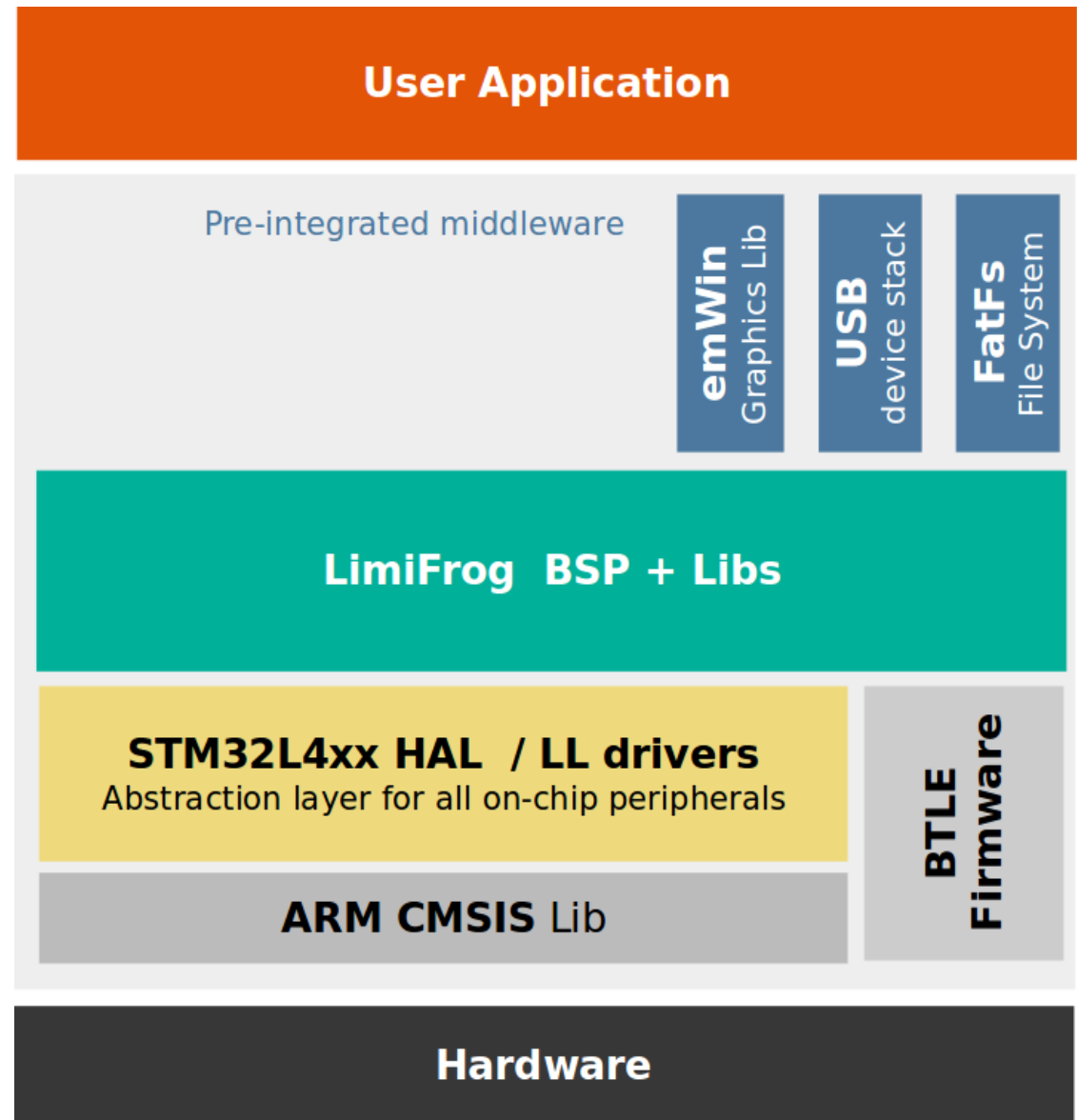
« Pre-integrated » middleware

- Data Flash ready to use as File System
- Data Flash ready to use as USB drive
- Display ready to use with Gfx library

Libraries made specifically for LimiFrog, to ease exploiting its resources

Generic library to drive all on-chip peripherals.
HAL : higher-level and polyvalent, but sometimes heavy
LL drivers : faster, denser but lower level

Low-level library
(uC register abstraction etc.)



Software (cont'd)

- MicroPython support : delayed but upcoming
 - « lean and fast implementation of Python 3, optimized to run on a micro-controller »
-- see *micropython.org*
 - Using terminal or scripts on file system (flash drive)
 - Ported to STM32L4 and LimiFrog by *Tobias Badertscher*
 - Merge into main MicroPython repo ongoing
- RIOT OS ported to early version (STM32L1)
by RIOT Team @ Hamburg University
- Porting to STM32L4-based LimiFrog tbc



Take-Aways

- A compact,
low-power,
fully-featured platform,
intended to be both powerful and easy to master
- Usable for quick demos as well as serious embedded programming
- Especially suited to produce credible demonstrators
when integration, size or weight matter

T H A N K Y O U

<http://LimiFrog.io>