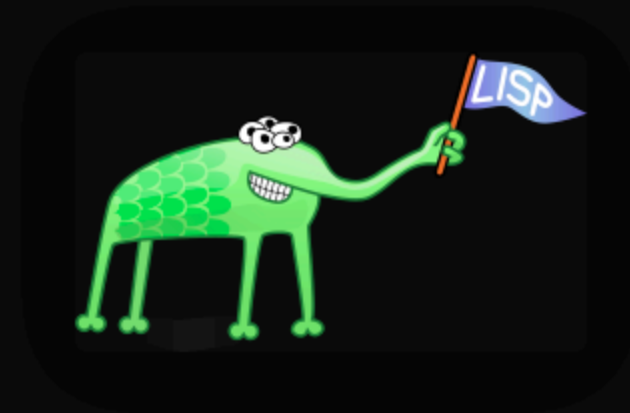


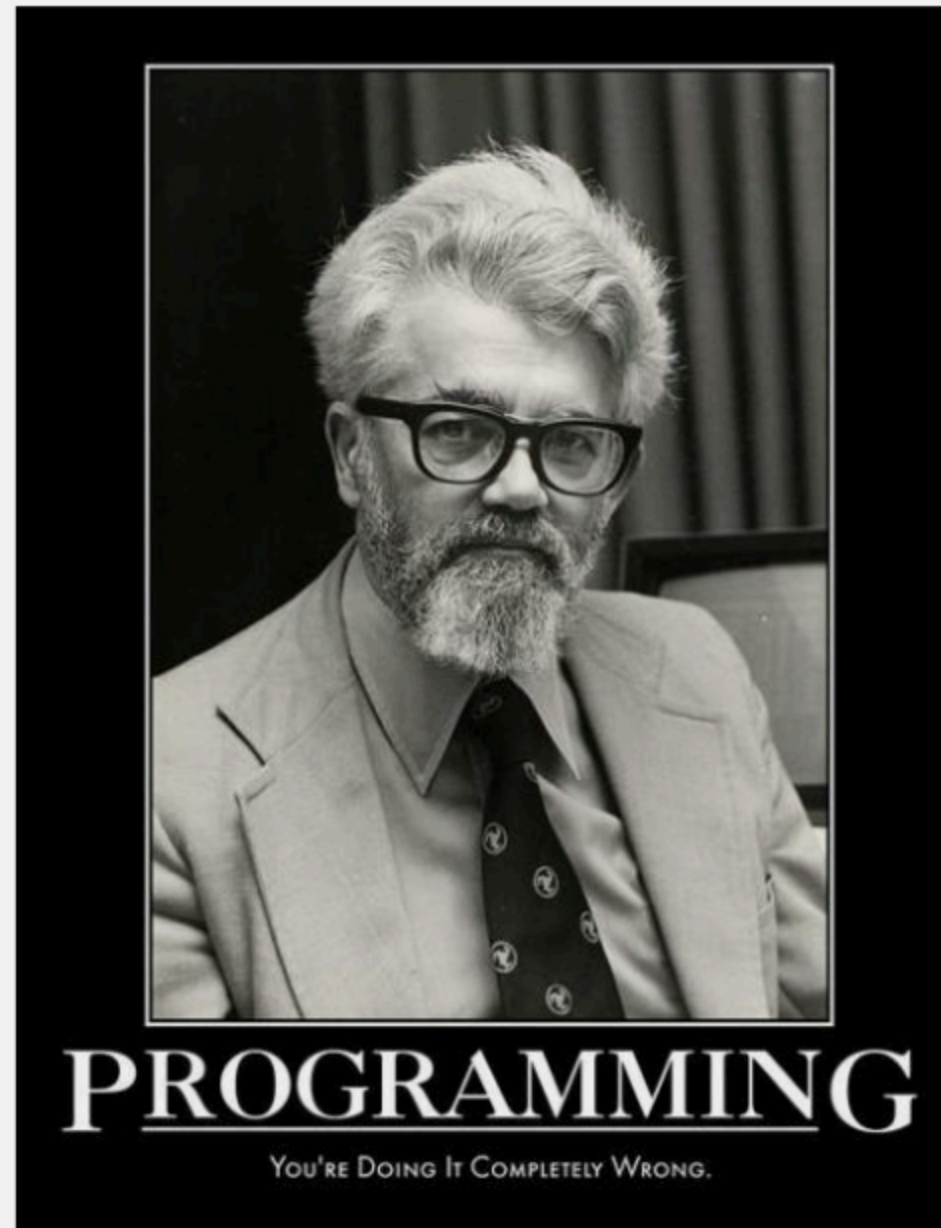
modus

a new bare metal lisp



lisp is not new

John McCarthy, creator of LISP



people once made machines that were only lisp



people nothing is more powerful than lisp



some of them looked like black and white versions
of the tools we use today

Display Debugger on Peek

Abort	Exit	Edit function	Breakpoints
Proceed	Switch windows	Find Frame	Monitor
Return	Help	Backtrace	Exit traps
Reinvoke	Bug Report	Source code	Call traps

Backtrace

PROCESS:PROCESS-BL
PROCESS:PROCESS-WA
→ SCL:PROCESS-WAIT
TV:AWAIT-WINDOW-EX
SI:COM-SELECT-ACTI
CP:COMMAND-LOOP-E
(PROPERTY SYS:DTP
PROCESS:WITH-DELA
TV:WITH-NOTIFICATI
PROCESS:WITH-PROC
SI:LISP-COMMAND-LO
SI:LISP-COMMAND-LO
SI:LISP-TOP-LEVEL1

Operation on SI:LISP-TOP-LEVEL1:
Clear trap-on-exit for this frame
Disassemble the function for this frame
Edit this frame's function
Reinvoke this frame
Return from this frame
Set the current frame
Set the current frame (detailed)
Set trap-on-exit for this frame
Show arguments with which frame was called
Show this function's argument list
Marking and yanking menu
Presentation debugging menu
System menu
Window operation menu

Inspect history

Breaks

The current frame is PROCESS:PROCESS-BLOCK-AND-POLL-WAIT-FUNCTION
s-A, <RESUME>: Proceed without any special action
s-B, <ABORT>: Allow process to continue
s-C: Return to Lisp Top Level in Dynamic Lisp Listener 1
s-D: Restart process Dynamic Lisp Listener 1
→ Set Current Frame SCL:PROCESS-WAIT
→

SCL:PROCESS-WAIT

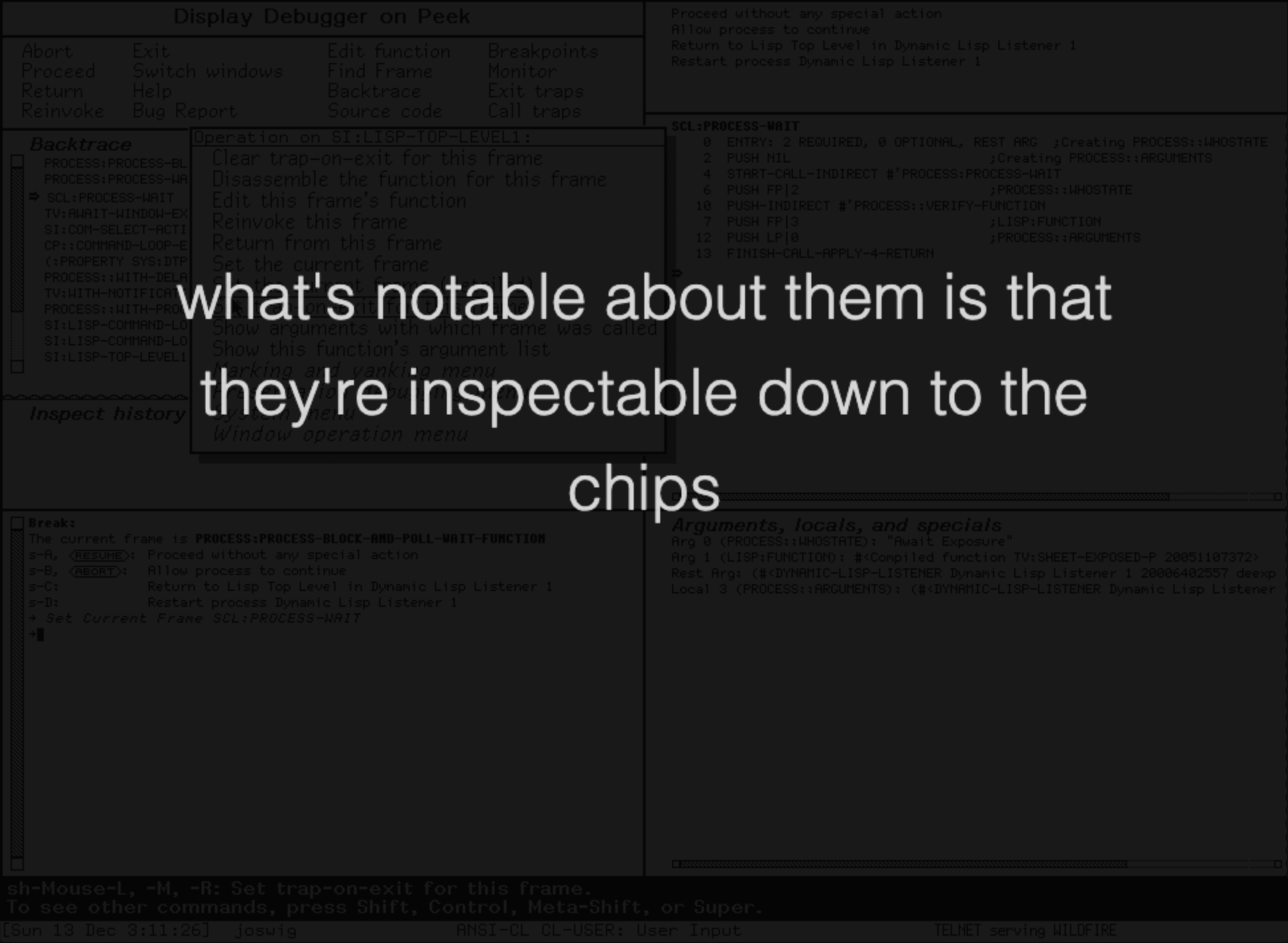
0 ENTRY: 2 REQUIRED, 0 OPTIONAL, REST ARG ;Creating PROCESS::WHOSTATE
2 PUSH NIL ;Creating PROCESS::ARGUMENTS
4 START-CALL-INDIRECT #'PROCESS:PROCESS-WAIT
6 PUSH FP|2 ;PROCESS::WHOSTATE
10 PUSH-INDIRECT #'PROCESS::VERIFY-FUNCTION
7 PUSH FP|3 ;LISP:FUNCTION
12 PUSH LP|0 ;PROCESS::ARGUMENTS
13 FINISH-CALL-APPLY-4-RETURN

Arguments, locals, and specials
Arg 0 (PROCESS::WHOSTATE): "Await Exposure"
Arg 1 (LISP:FUNCTION): #<Compiled function TV:SHEET-EXPOSED-P 20051107372>
Rest Arg: (#<DYNAMIC-LISP-LISTENER Dynamic Lisp Listener 1 20006402557 deexp
Local 3 (PROCESS::ARGUMENTS): (#<DYNAMIC-LISP-LISTENER Dynamic Lisp Listener

sh-Mouse-L, -M, -R: Set trap-on-exit for this frame.
To see other commands, press Shift, Control, Meta-Shift, or Super.

[Sun 13 Dec 3:11:26] joswig ANSI-CL CL-USER: User Input TELNET serving WILDFIRE

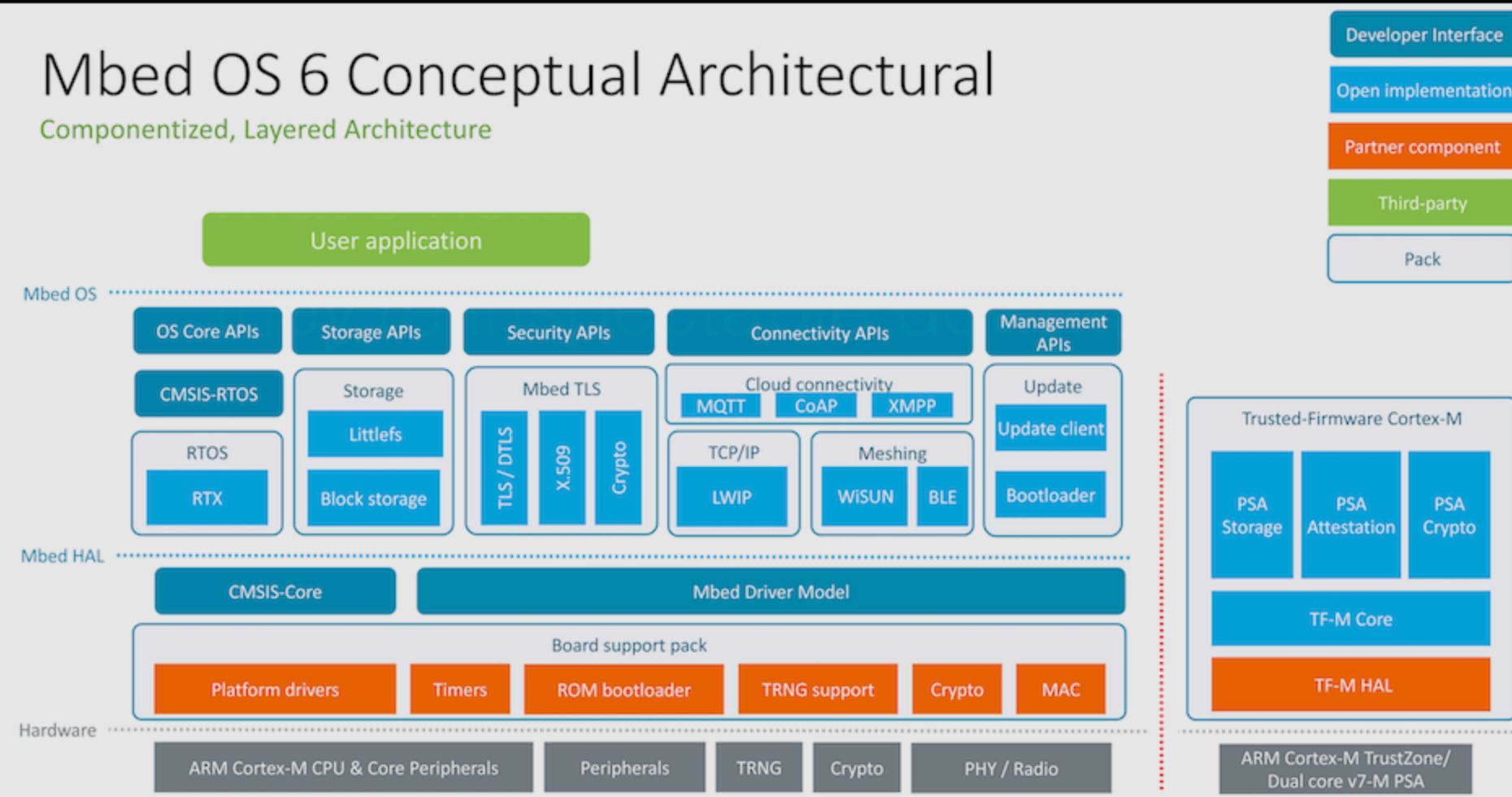
some of them looked like black and white versions
of the tools we use today



modern stacks are complex — at best you can
see into the app

Mbed OS 6 Conceptual Architectural

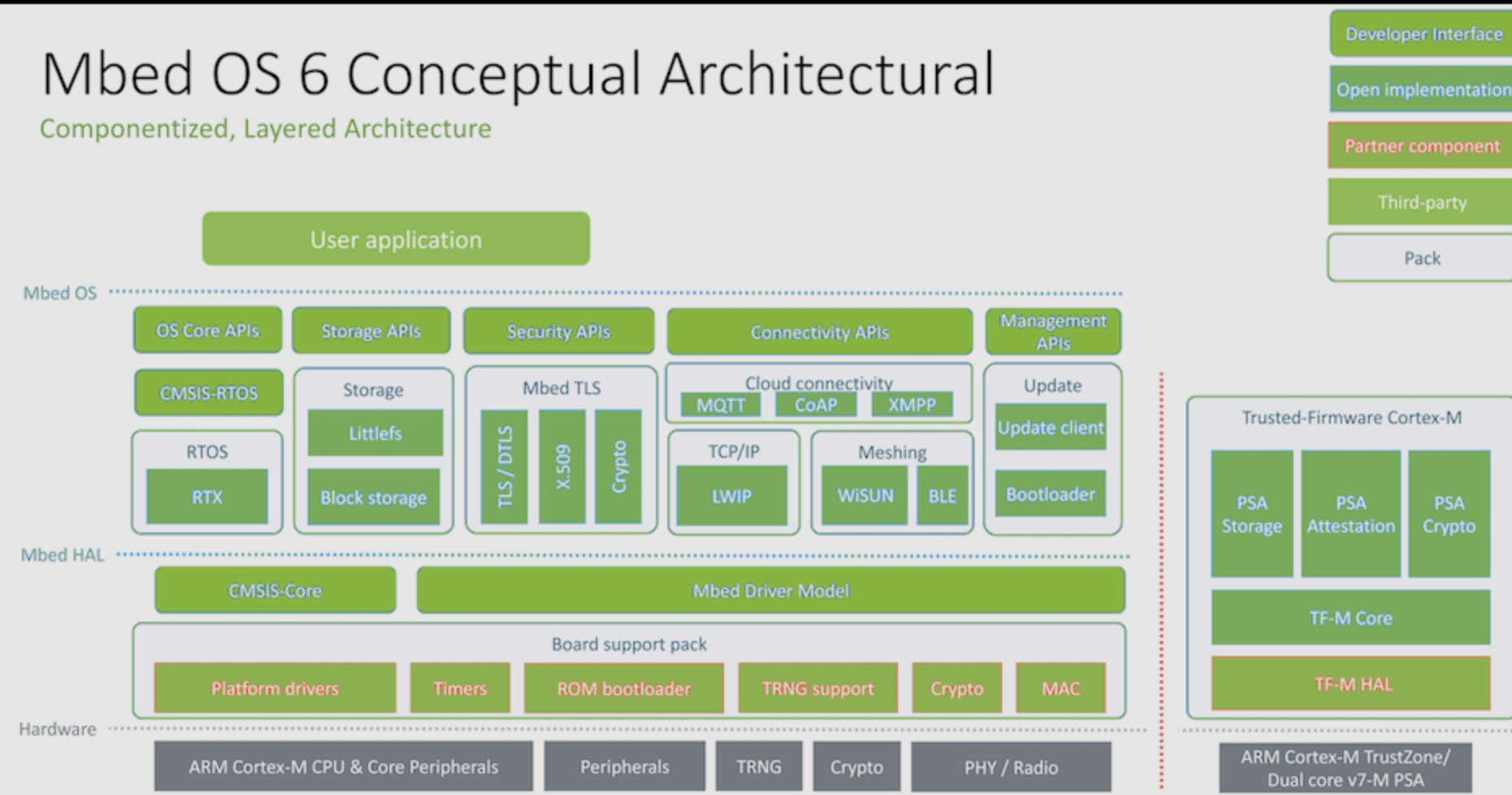
Componentized, Layered Architecture



when you have lisp on the metal, everything is
see visible app

Mbed OS 6 Conceptual Architectural

Componentized, Layered Architecture



this isn't hypothetical. every binary blob is a hole
below the water line

EXODUS BLOG

Broadpwn: Remotely Compromising Android and iOS via a Bug in Broadcom's Wi-Fi Chipsets

JULY 26, 2017

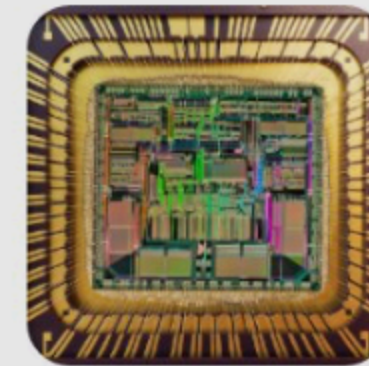
Vulnerability Analysis, Exploit Techniques

this isn't hypothetical. every binary blob is a hole
below the water line

to be sovereign we need to be seaworthy

ynniv/modus

bare metal lisp for sovereign computing in the post
agi world



1

Contributor

0

Issues

3

Stars

0

Forks



GitHub - ynniv/modus: bare metal lisp for sovereign computing in the post agi ...

Vulnerability Analysis, Exploit Techniques

to be sovereign we need to be seaworthy

it boots two (emulated) platforms,
but emits:

ynniv/modus

bare metal lisp for sovereign computing in the post
agi world

x86-64, i386, AArch64,
RISC-V 64, PPC64, PPC32,
ARMv5, ARMv7, Motorola
68k



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Contributor

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Issues

3

Stars

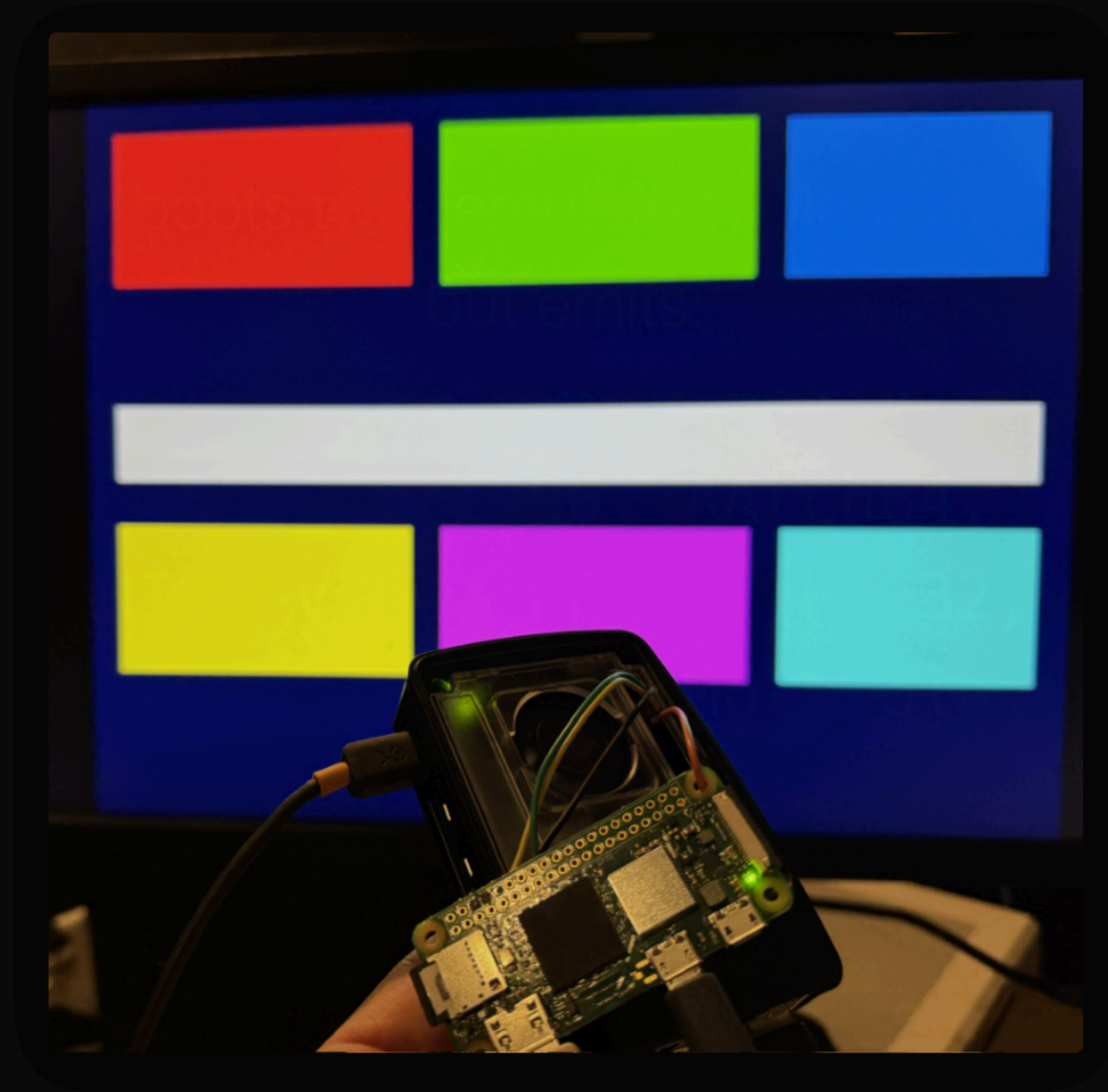
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Forks



GitHub - ynniv/modus: bare metal lisp for sovereign computing in the post agi ...

claude did this in three weeks (pi zero 2 w)



claude did this in three weeks (pi zero 2 w)

also working on a universal boot
image:

host lisp → x64 → aarch64
→ riscv → x64

modus

