SOFTWARE FREEDOM
ESSENTIAL FOR BUSINESS AND INNOVATION

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WHAT ARE EMBEDDED SYSTEMS?

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MODERN EMBEDDED SOFTWARE IS BIG AND COMPLEX

Examples:

➜ Mobile phone handsets run software that consists of *millions* of lines of code

➜ A top-of-the-line car has in excess of a Gigabyte of software

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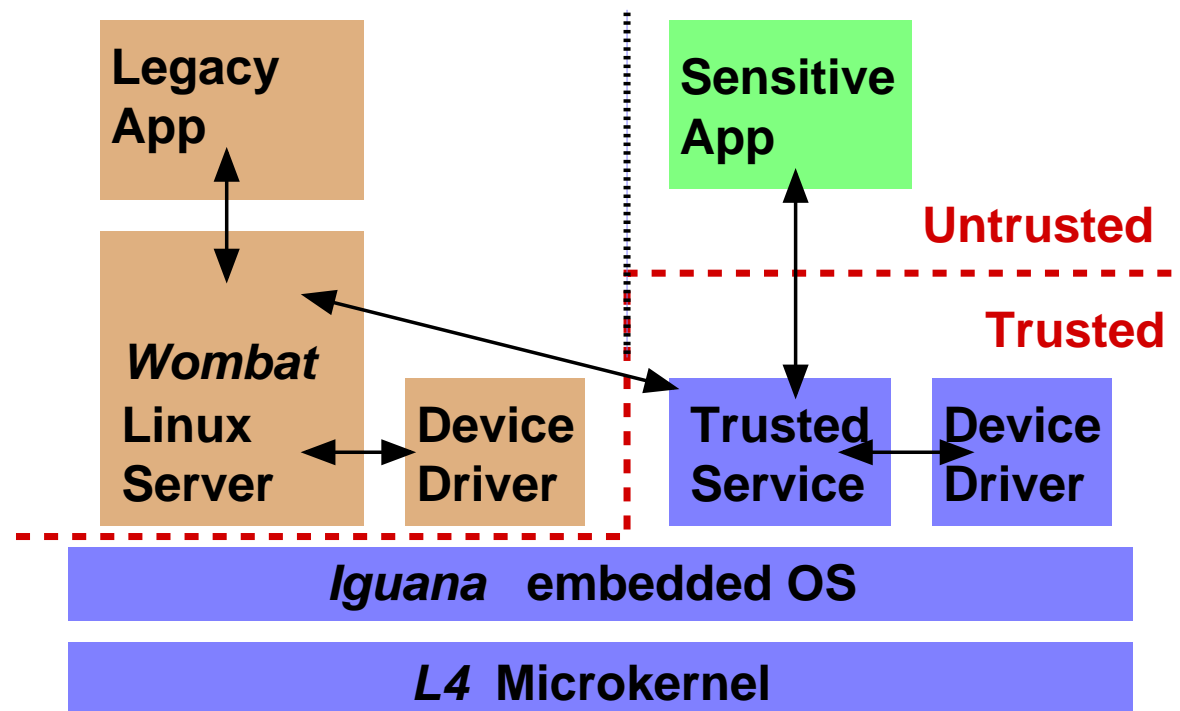
The consequence?

www.spass24.com

WHAT DO WE DO ABOUT IT?

L4/Iguana: An Operating System for Trustworthy Embedded Systems

L4/Iguana:

➜ supports structuring embedded software into isolated components

➜ allows running an other operating system on top (eg Linux, Windows)

Legacy App		Sensitive App

Untrusted

Trusted

Wombat Linux Server ⟷ Device Driver   Trusted Service ⟷ Device Driver

Iguana embedded OS

L4 Microkernel

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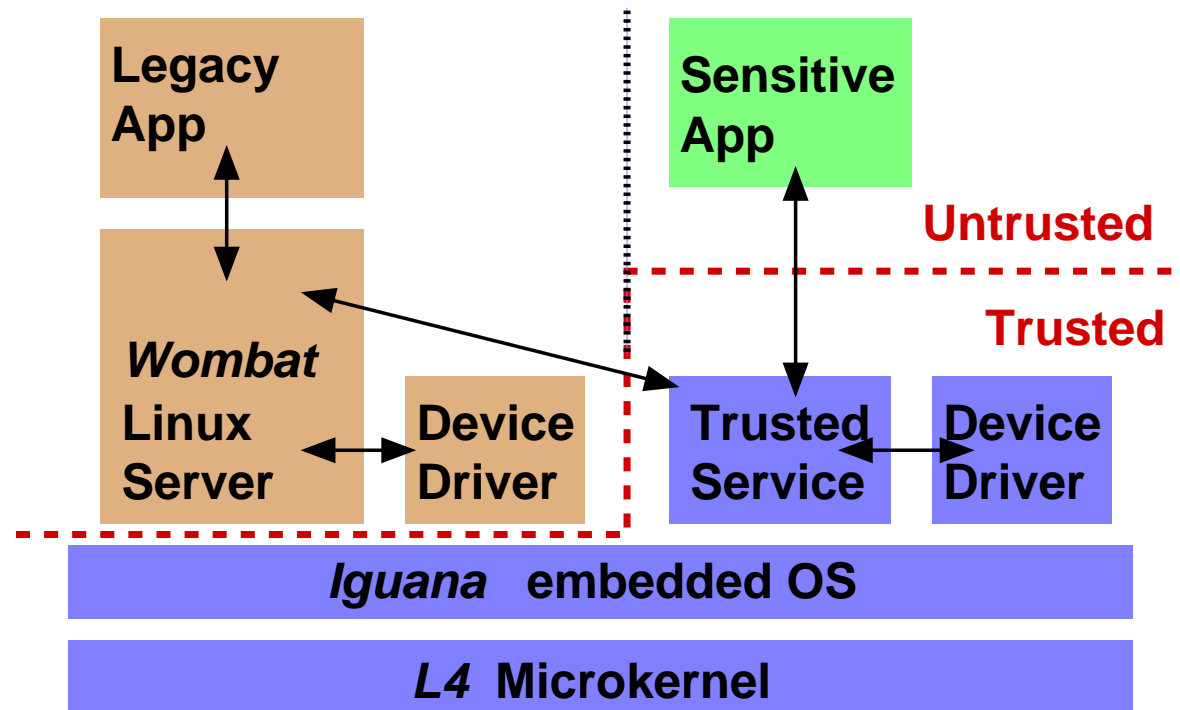- ➜ allows running an other operating system on top (eg Linux, Windows)
- ➜ minimises the amount of code that needs to be trusted (as little as 20,000 lines of code)

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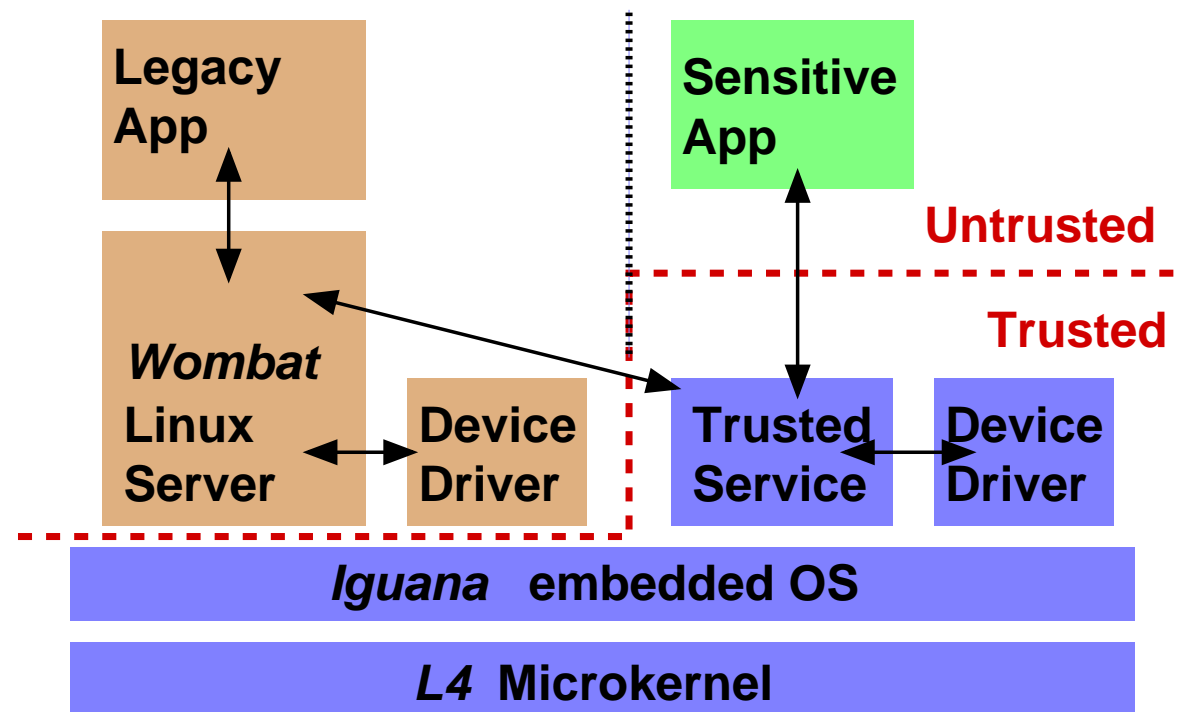
➜ working on *mathematical proof of correctness*

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L4 **Microkernel**

Who cares?

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- The embedded-systems market is huge.

- So are the players.

- Who is interested in a bunch of researchers in Australia trying to change the world?

Open source levels the playing field:

- Chance to create visibility

- Selling without a salesforce

- Distributing without a distribution network

Open source is good for clients:

- not at the mercy of vendors

- ability to fix show-stoppers quickly

- less chance of back doors

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This is why our customers like it

- But it is also the reason why we use open-source ourselves

Can you live from it?

- Apparently yes

- Embedded systems is a **service** industry

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- *Open Kernel Labs* is making significant inroads in ES market

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Better get used to it — you'll have to!

- Open-source is inevitable for the infrastructure level
  - ➜ because it makes economic sense

- Those who are unable to adapt to this will have problems

You want to run a global business from Oz?

May the Source be with you!