

# Open Architecture Genie SKA Spin-up & Spin-off

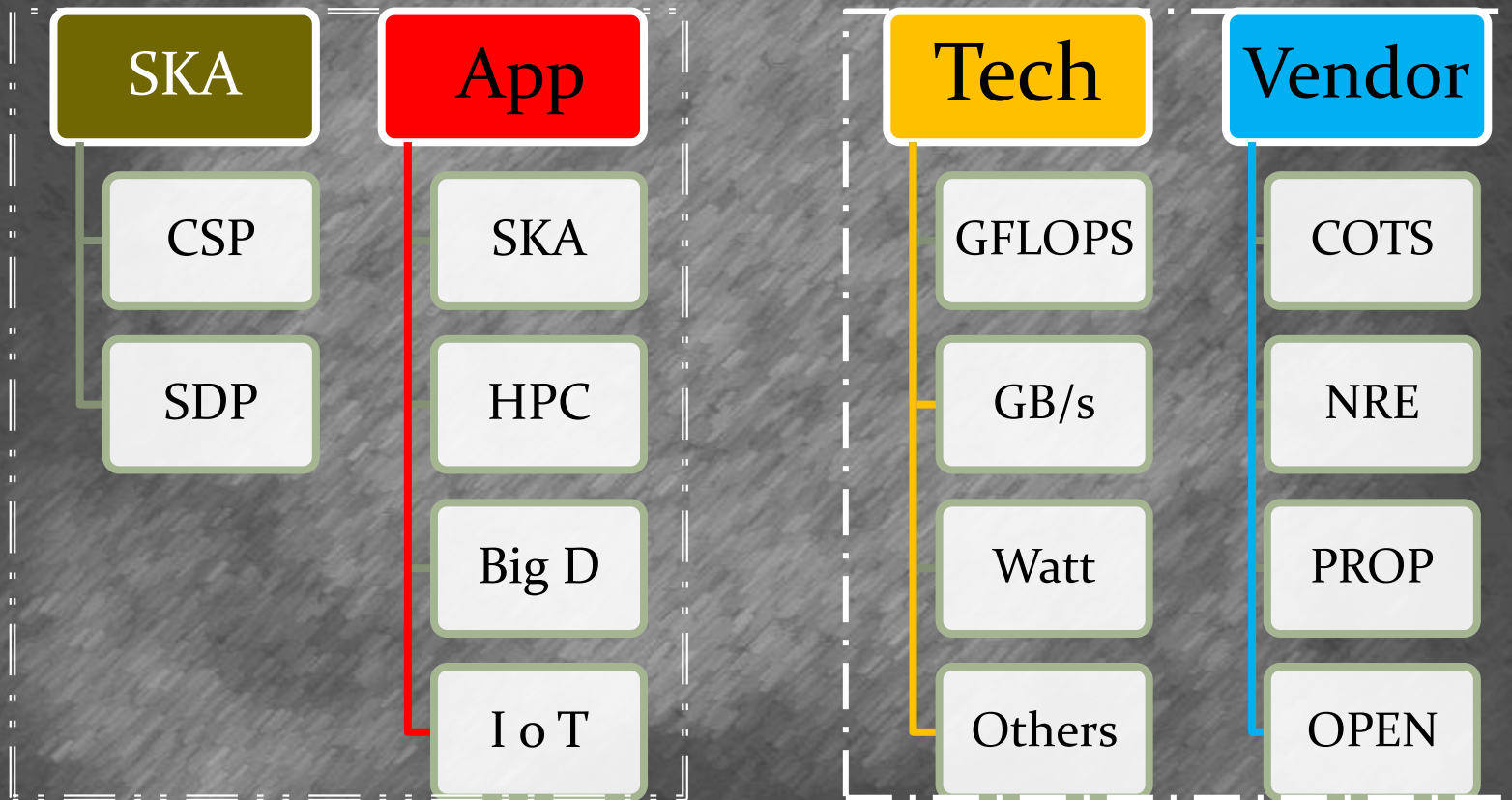
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C4SKA 2016-02-11 AUT

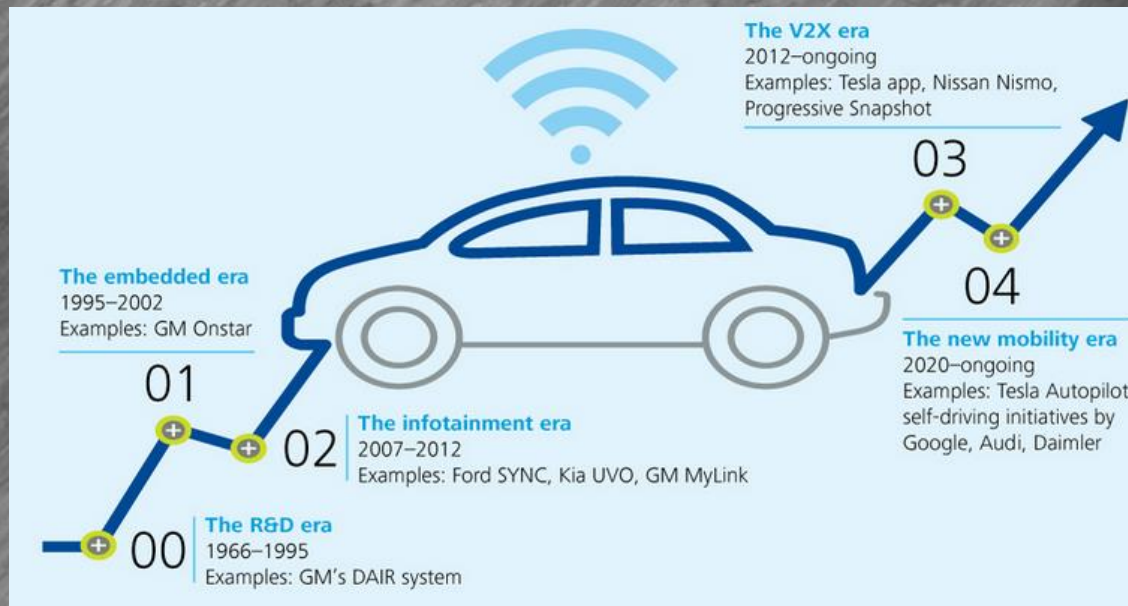
Calling for Attention & Participation

# Computing- HPC & BD



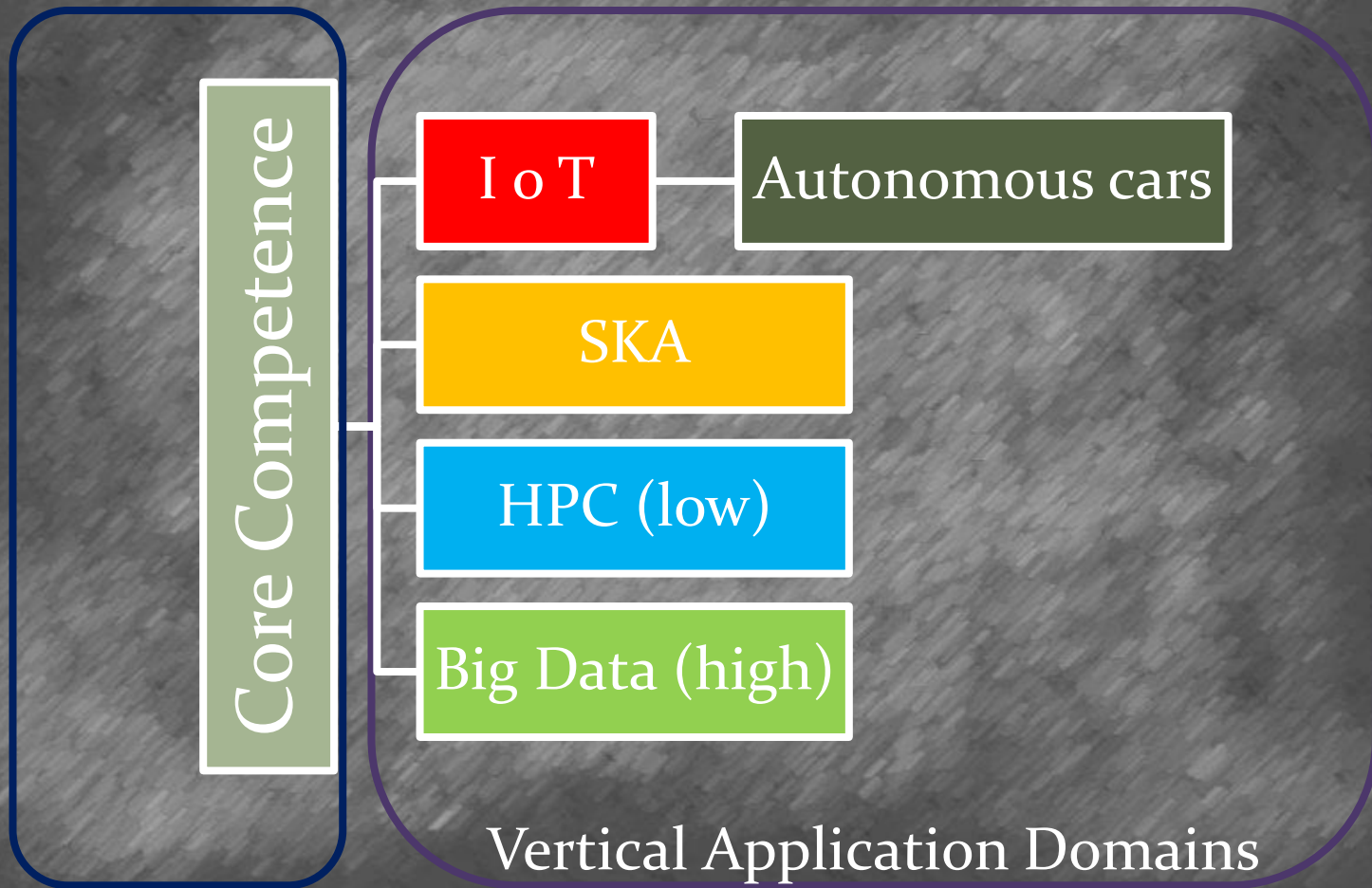
# Autonomous Cars (Example)

- 7 billion people connected in motion
- Does not happen overnight
- What does NZ contribute?



Graphic: Deloitte University Press, DUPress.com

# Where to Start? (Platform Concept)



# What's the Platform? (open bricks)

- Platform Concept → Foundation, on which we can build many different applications

Parallel Algorithms

Parallel Software

Parallel Hardware

Open Standards

Open  
Architecture

# Open Bricks?

SW

HW

FOSS such as  
OpenCV,  
Blender ...

SPARC, **RISC-  
V**, ...

Big Data  
Open Stack

Tools such as  
OpenCL,  
OpenMPI, ...

Open Rack,  
**Open  
Compute**

Linux, GNU,  
**Open HPC**

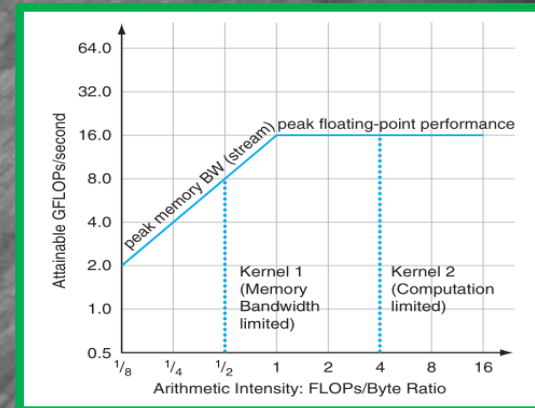
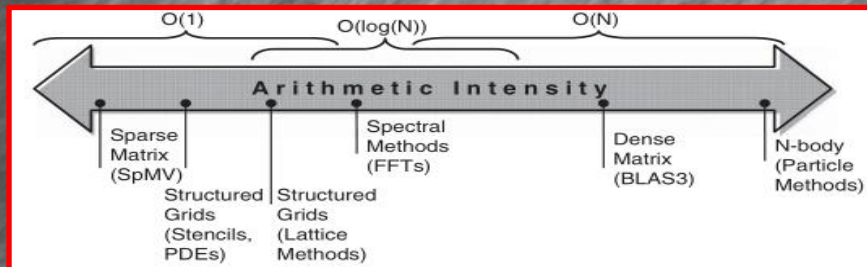
Logisim for  
CPU design

**Open  
Power?**

Open FPGA,  
Core, GPU ...

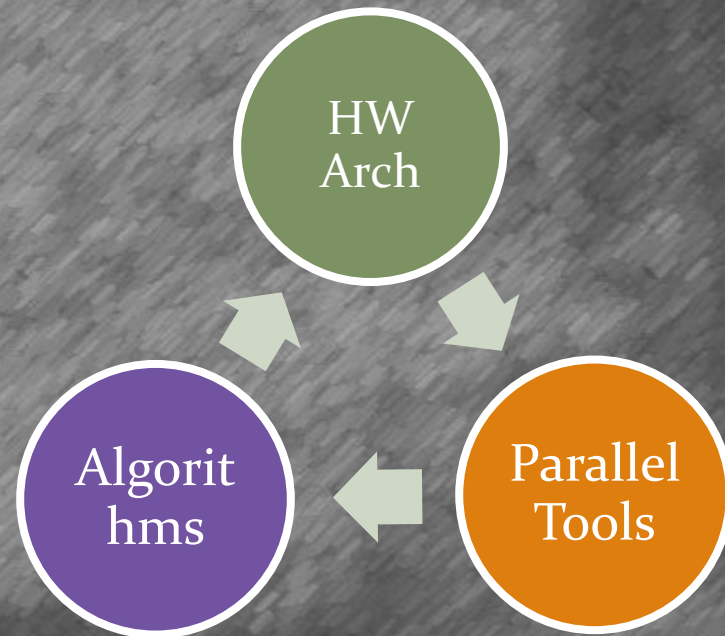
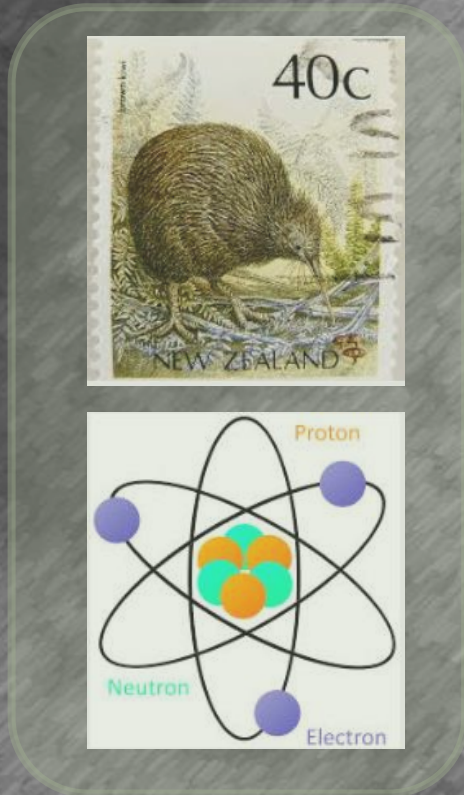
# Spectrum of Applications

- Every application has its own specific requirements
  - SKA CSP and SDP differ
- Every hardware type has its own specific merits
  - CSP and SDP will use totally different hardware



# Initial Approach & Scope

- A small subset of the disciplines of computer science and system engineering



**Benchmarking to verify claims and reveal relevant properties**



# What will Happen? (release potentials)

- SKA NZ Alliance
- COTE for Applications
- Supercomputing Centres
- Research, Manufacturing, Service Industries

*Modern Aladdin  
Lamp*



*The innovation is the contribution of insight to the development of individual applications*

# Where are we at? (need to scale up)

$$5 / 100 * 100 = 500 / 100,000$$



- Compucon (5 R&D, 100 peers & citizen scientists) is a custodian till a national & inspirational organisation is ready to take over