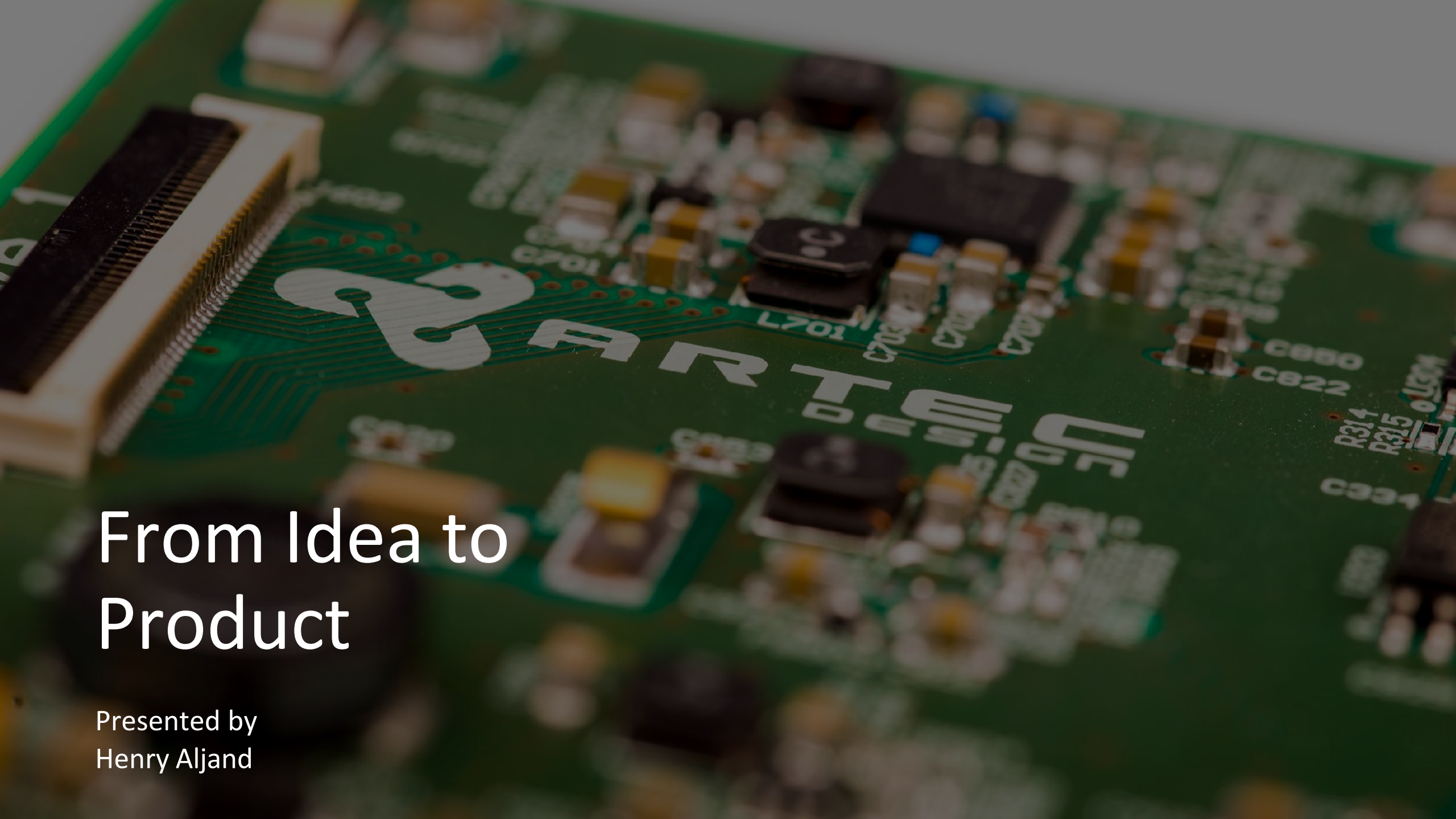




From Idea to Product

Presented by
Henry Aljand

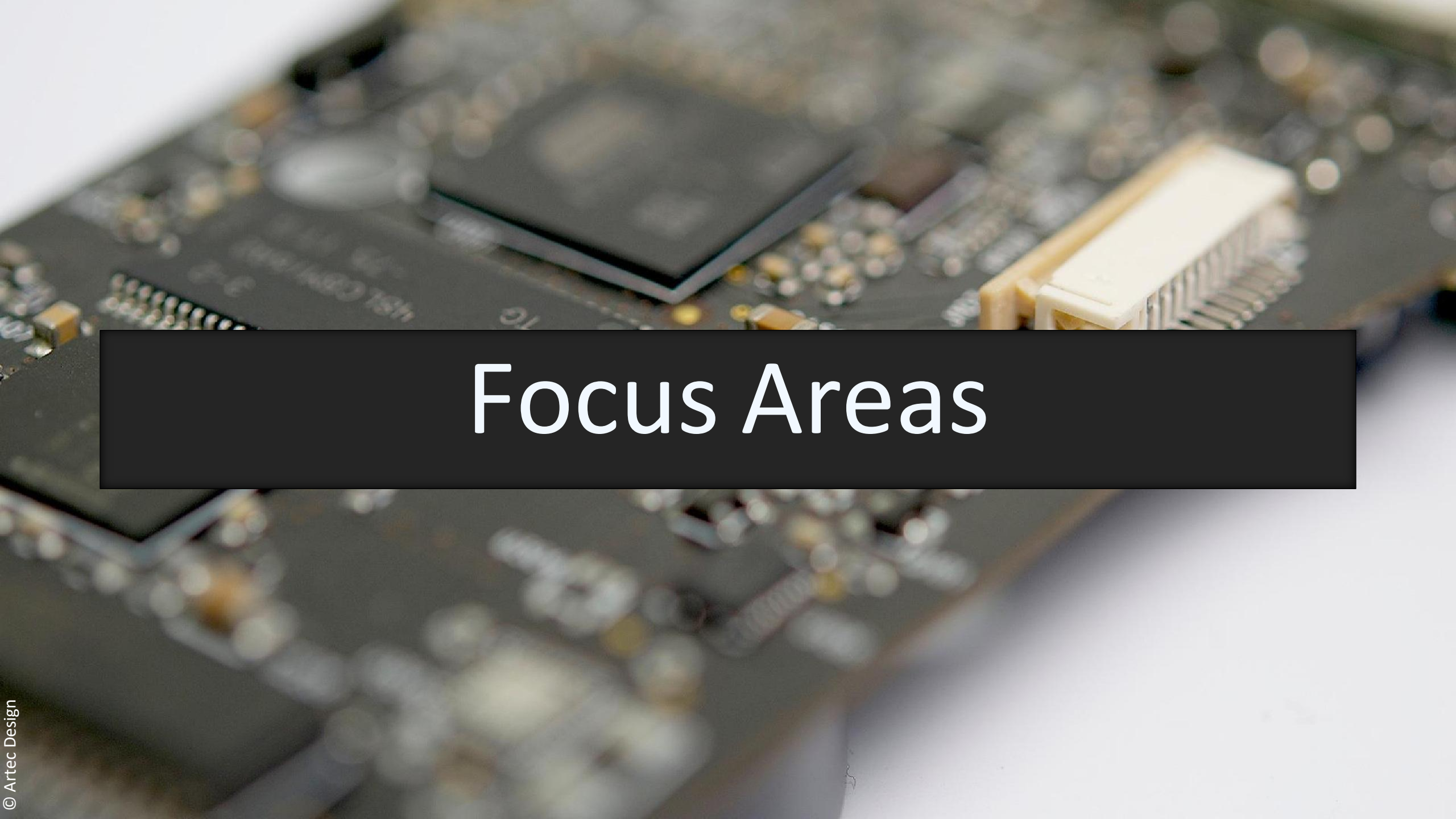
Artec Design

Established in 1998

Idea to product
engineering services

150+ clients from
10+ countries





Focus Areas

Hardware Design

Component selection

Schematic design

PCB layout

Circuit integration

CAD – Altium Designer,
(PADS, OrCAD)



Software Development

Cortex-M firmware

Cortex-A software

Cortex-A Linux

(PC & mobile software)

Languages – C/C++,
Rust, (Java, C#, JS)

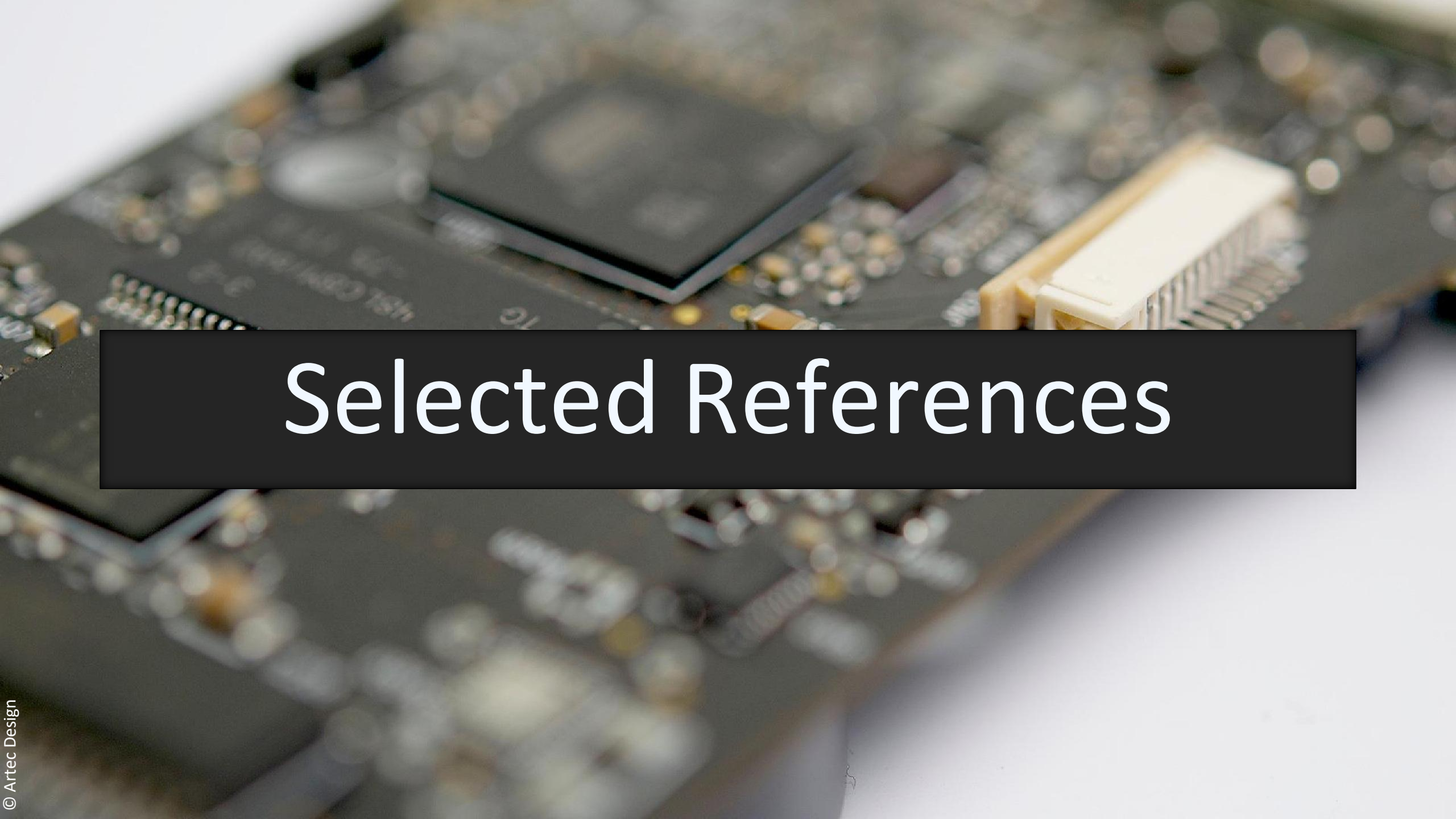
Production

- Prototyping:
in-house

- Small quantities:
in-house

- Large quantities:
external partners





Selected References

Ridango

Ticket validators
Ticketing controllers
USB comm. hubs
Inspection devices

Visa & MasterCard
certified

35000+ devices

Sweden, Estonia,
Ukraine, Lithuania, ...



Myoton

Muscle health
measurements

Medical, sports
and research

Launched to ISS

Keywords – i.MX 7,
Linux, C/C++, LCD,
battery



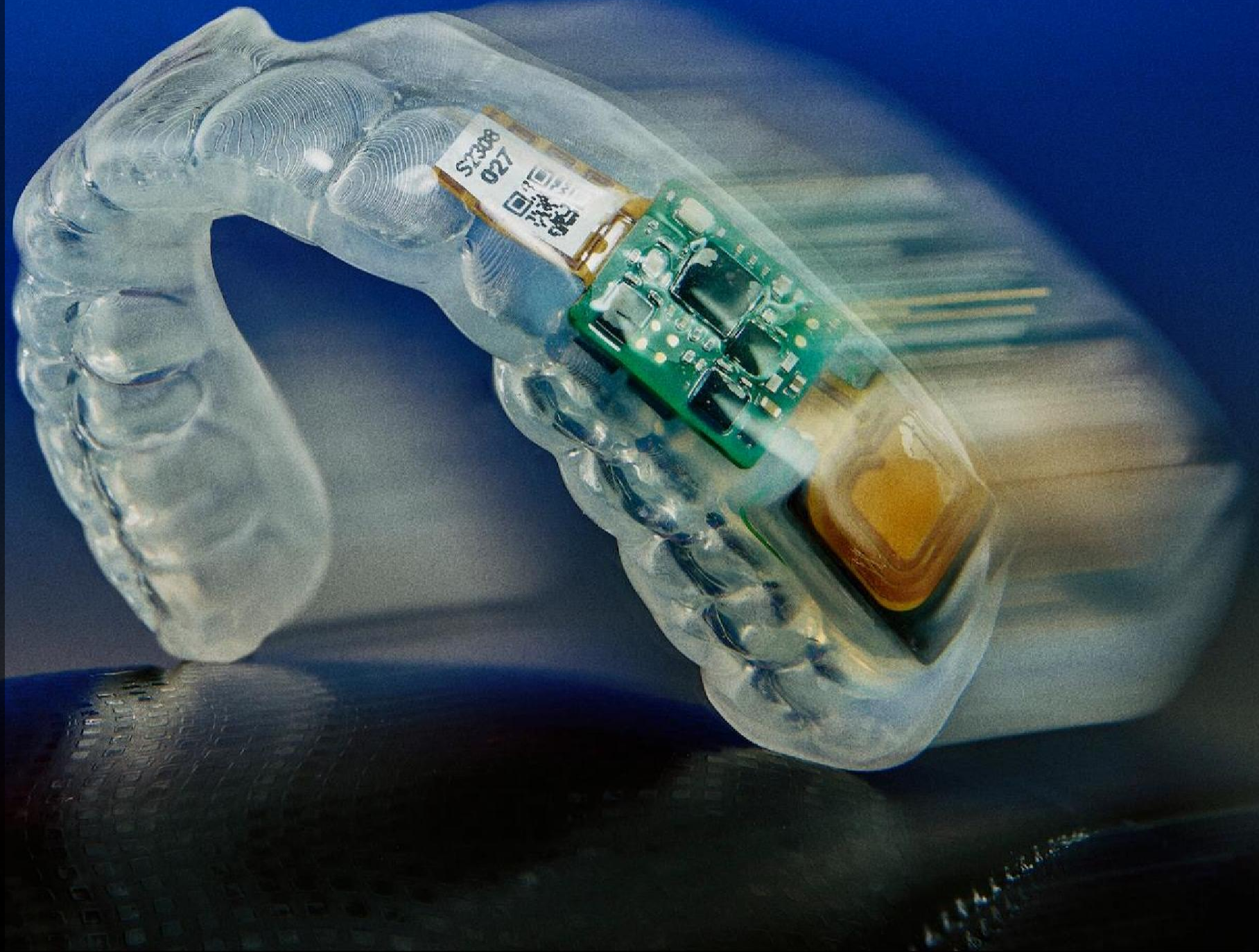
Prevent Biometrics

Impact monitoring
mouthguard

Rugby and NFL

United States
Armed Forces

Keywords – Renesas,
USB, NFC, battery,
wireless charging



Ongoing Space Project: Celestial Datalink Module (CDM)

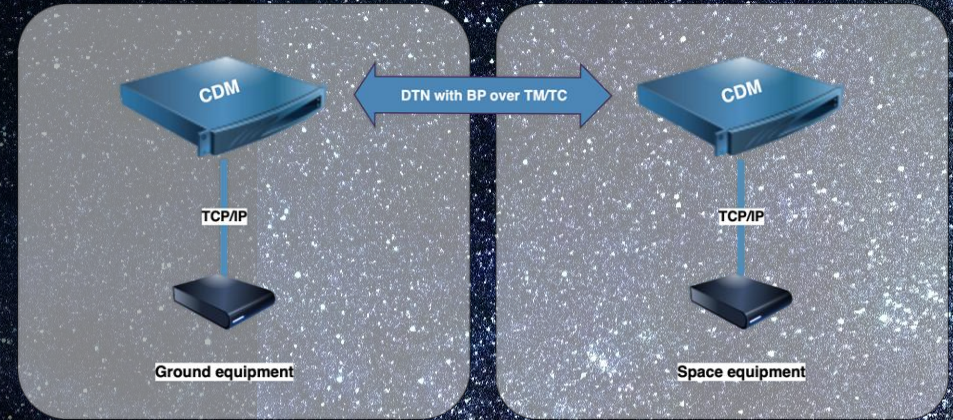
CDM (TRL 3 in 2026):

- Digital domain with external radio interface
- TM/TC protocol pair for Space Data Link layer
- DTN with BP and LTP for upper layers

Final product:

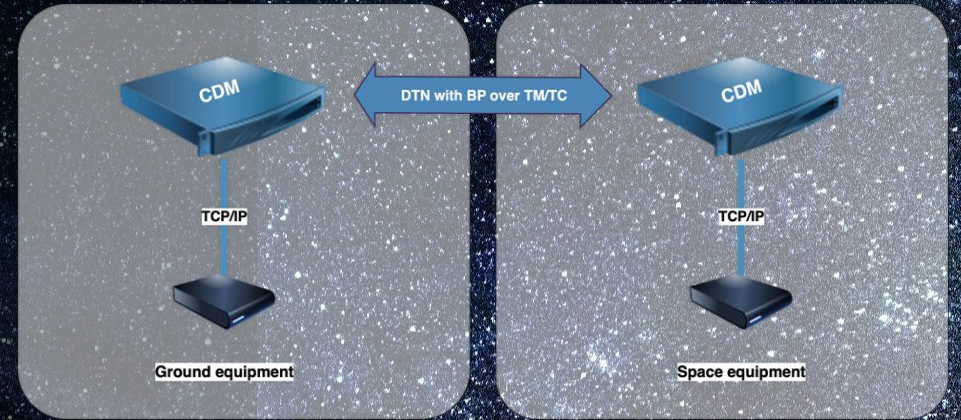
- Single HW unit, easy to deploy and integrate
- Standardized protocol stack for space links and onboard network
- Space grade – customised to use case needs

DTN is a key technology for Solar System Internet



CDM Key Features

- Custody transfer for critical traffic
- Multi-hop routing in DTN network
- Encryption for securing in-transit traffic
- Traffic isolation similar to VLAN
- Traffic prioritization similar to QoS



Ongoing Space Project: RAMBLER Module

RAMBLER:

- Applying ML methods to monitor battery State of Health
- Focusing on edge AI using ARM Cortex-M uC and TinyML
- Small and lightweight
- Supports 18650 cell modules



Artec Design @ Space

Focus areas:

- Communication modules (DTN, IP over CCSDS): efficient and easy to configure, deploy
- HRE: motion control, neuromorphic and optical electronics HW, edge hardware with AI
- FDIR with edge hardware and AI



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