



RARE - FREERTR
NVIDIA DOCA VIRTUAL
EUROPEAN HACKATHON
MARCH 22ND, 2022

RARE TEAM

During the Hackathon

- EUROPEAN country
 - Hungary
 - France
- Members of the team
 - Csaba MATE / KIFU
 - Frederic LOUI / RENATER
- Team expertise
 - Network architect / freeRtr maintainer
 - Network architect / Technical leader



Csaba MATE



Frederic LOUI

THE CHALLENGE

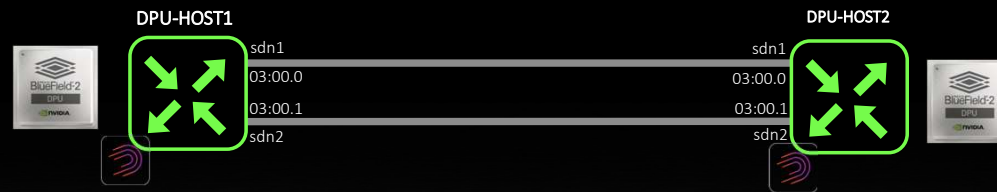
Add NVIDIA DPU RARE/freeRtr support

- Several possibilities:
 - P4
 - DOCA
 - DPDK
- How is it being addressed today?
 - DPDK dataplane is working flawlessly
 - Depending on DOCA library maturity and availability this can extend RARE/freeRtr possible usage
- What is the innovation?
 - RARE/freeRtr is a swiss army knife that is meant to be used as primarily a router but it can also be used as a specific appliance.
 - DOCA libraries can be linked in order to provide additional functionality (regex, macsec encryption, DPI engine) at line-rate
 - Thus unlocking some new use case

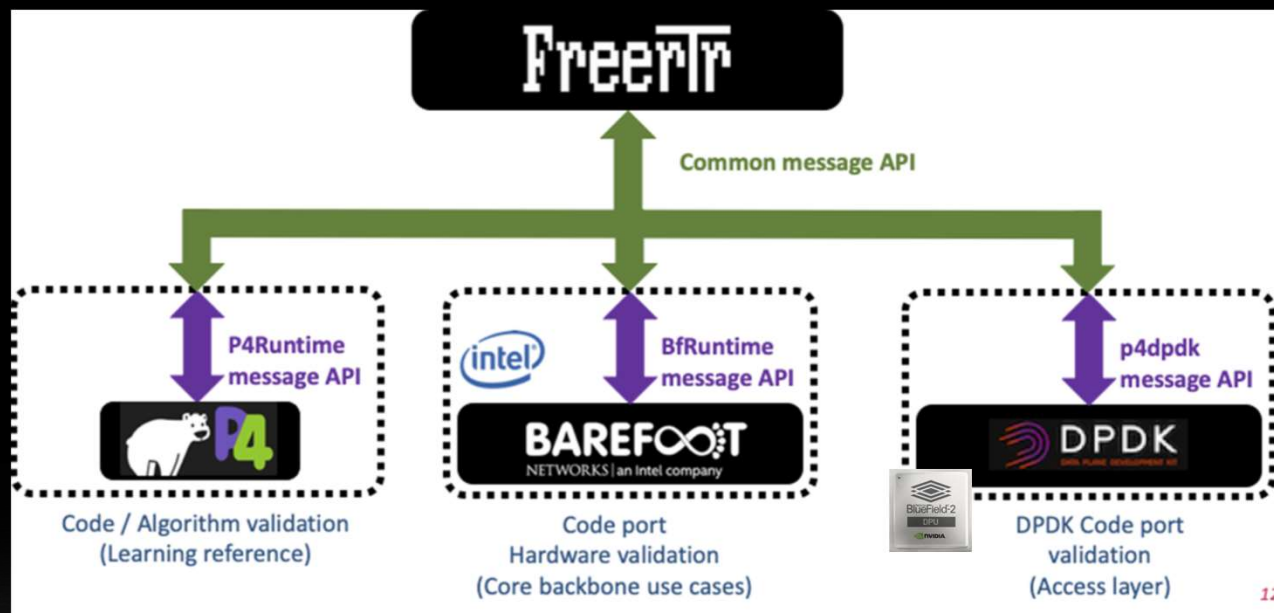
THE SOLUTION

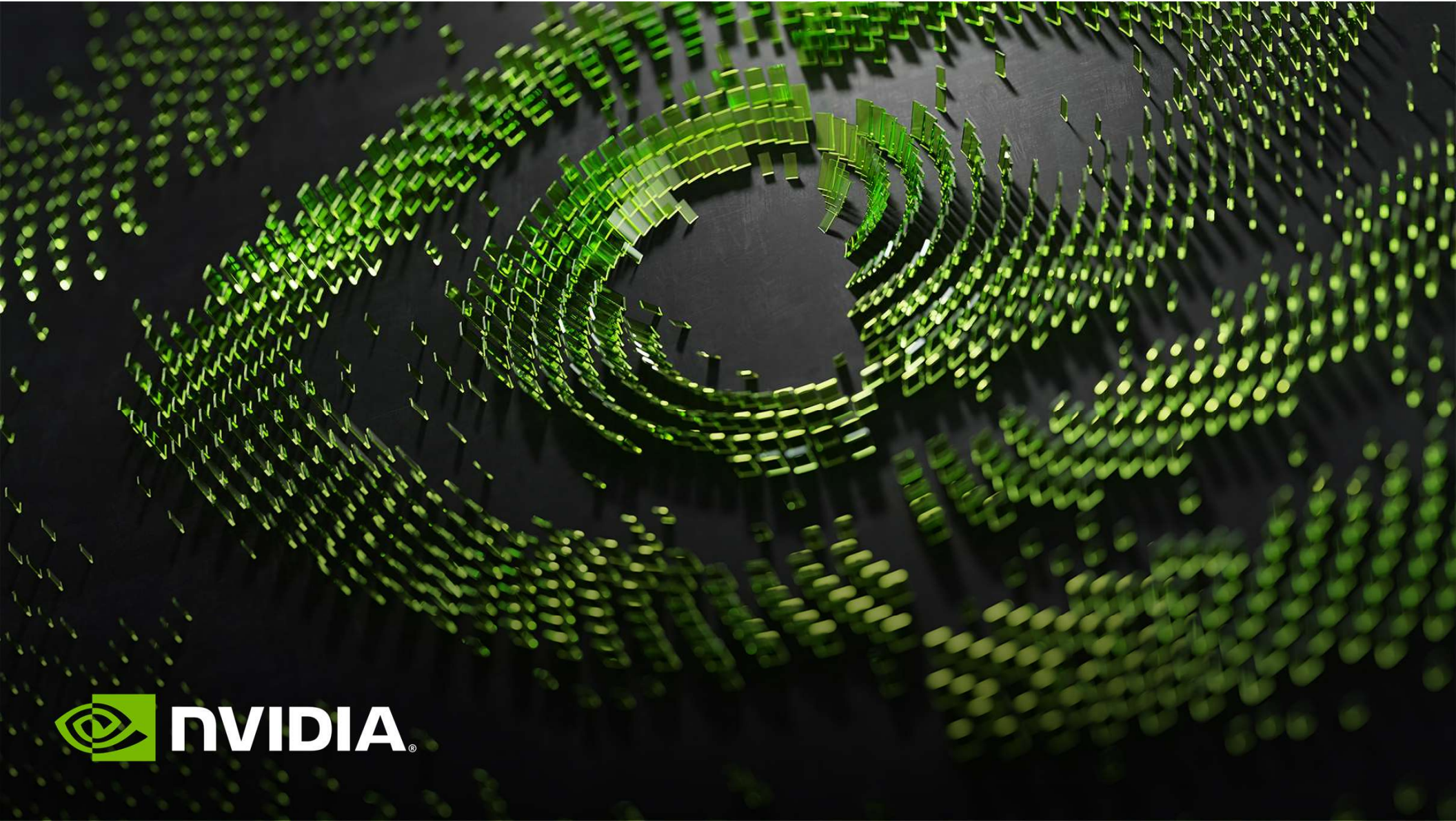
- What is your offering?
 - A common routing/network platform boasting various dataplane
 - Vice-versa dataplane can be automated by your own control plane
 - Fully programmable
 - Disaggregated
- What's unique about it?
 - One control plane to rule all dataplanes
 - P4 BMv2 / TOFINO
 - DPDK
 - DPDK/CODA extention (=> future work)
 - SWITCHDEV Spectrum v2/v3 ASIC (?)
- Why is the solution better than other solutions?
 - Industry standard
 - Fully interoperable with existing vendor
 - Used by NREN since 2010
 - Dataplane appeared in 2019 with the RARE project
 - Simple
- What is your setup?
 - freeRtr control plane ⇔ interface ⇔ Candidate(in the Hackathon, NVIDIA / DPU) dataplane
- What is the business benefit? Performance improvement
 - Possibility to innovate and become disruptive
 - Leverage powerful hardware design such as DPU
 - Lower TCO and reduce lead time development

DEMO TIME



CONCLUSION → NEW HARDWARE DATAPLANE !





 **nVIDIA**®