NetIDE

Our path to a rich SDN eco-system

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Layout

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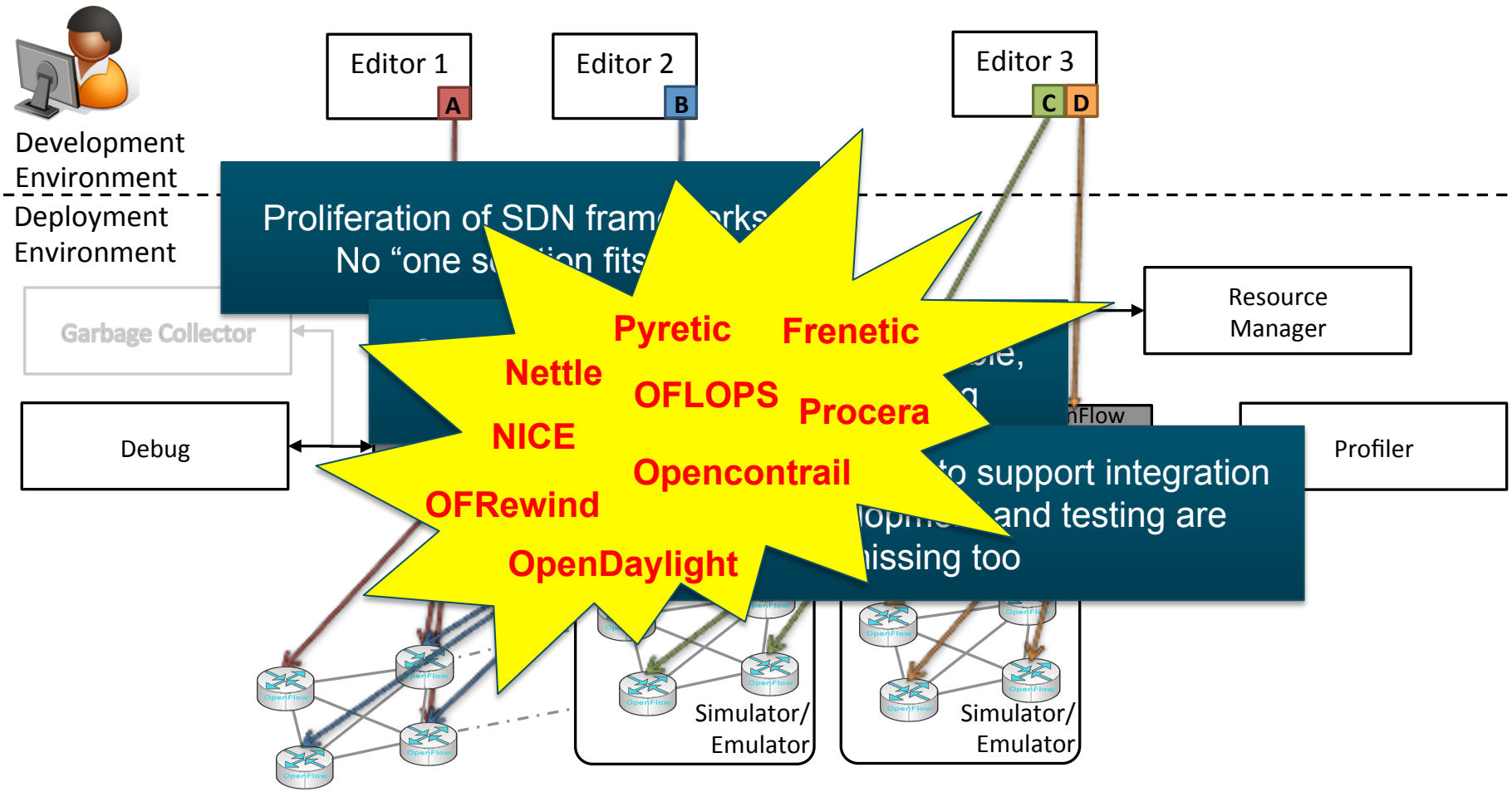
State of the SDN landscape

PROBLEM STATEMENT

Some experiences

- When confronted with SDN/OpenFlow, you go through several shocks
  - Which controller(s) can I use with my network equipment?
    - What programming language/paradigm will I need to adapt to?
      - Ruby
      - Python
      - Java
      - C
    - What IDE can I use to develop my apps?
      - Eclipse
      - Vi
    - Do I need to start from scratch?
    - Are the sample applications provided more than just toy examples?
  - How can I test my apps?
    - Simulate/emulate before deploy
    - Deploy in an isolated environment
      - How do I replicate the conditions in my production environment
    - Deploy in my production environment
      - Something went wrong, but what????

The state of the SDN landscape in one picture



THE NETIDE APPROACH

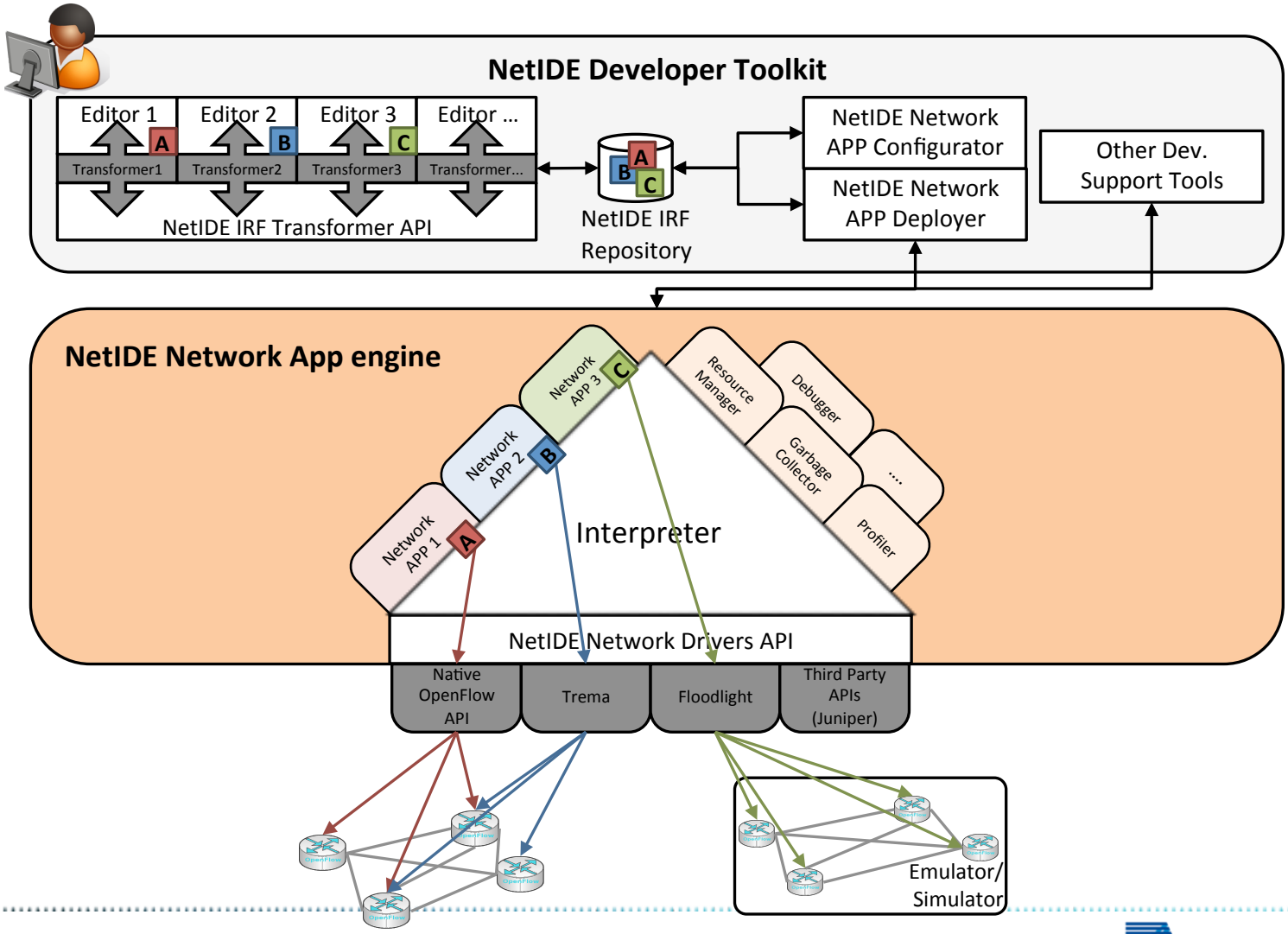
NetIDE Concept

- NetIDE aims at delivering a single point of entry to SDN development that support the whole development lifecycle of network controller programs in a vendor-independent fashion
- In short:
  - A controller- and gear-independent approach to support the development of Network Apps
  - Integrated development and tool support for the network design cycle in SDN environments
  - New network layer services and the support for emulator-in-the-loop and simulator-in-the-loop configuration

Main Objectives

- Define a *unifying language* that is able to abstract different SDN approches together with a set of APIs to support the development of SDN solution-independent network applications
- Deliver a prototype IDE and associated tools that support the SDN development lifecycle based on this language
- Develop a prototype of a run-time environment applications based on this language – the Network App Engine – that supports open & proprietary SDN controllers, and allows for emulator/simulator-in-the-loop
- Promoting the establishment of an Open SDN Model based on an Open Community of developers

NetIDE concept in one picture



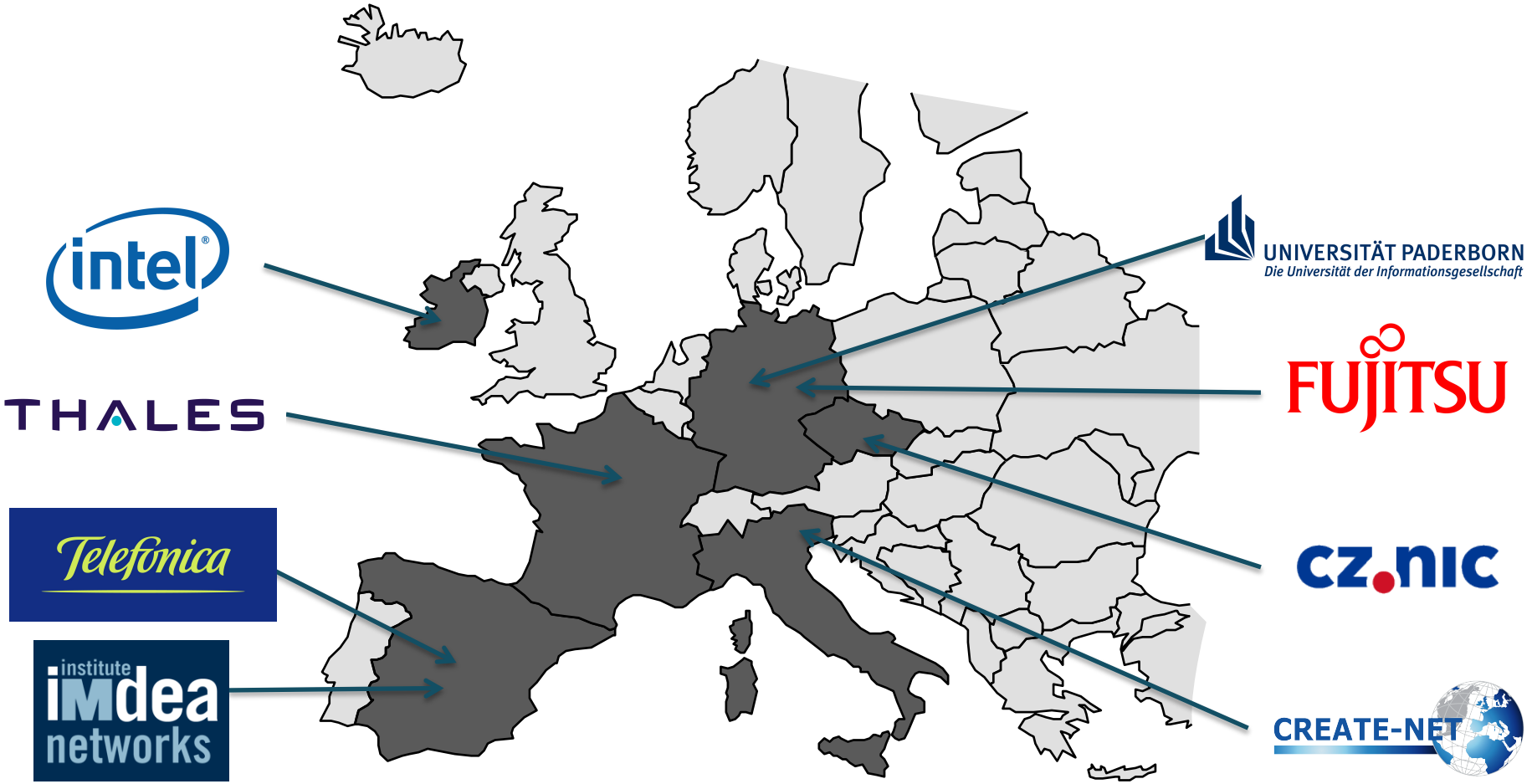
Looks like OpenDayLight?

NetIDE

- Yes and no
- Definitely, the Network App Engine looks suspicious.
  - Same principle of ‘Network Apps’ that get executed to interact with the SDN hardware
- However
  - We think that people writing SDN Controllers are very knowledgeable people
  - We don’t feel like reinventing the wheel; so we’d rather leverage on them and work on the ‘*S’ aspect* of SDN
  - We are working on applications to work with the Networks Apps
    - Debugger
    - Profiler
    - …
- OpenDaylight is yet another controller that internally looks very much like the reference architecture SDNRG is working on
- The NetApp Engine will leverage on the same principles

THE NETIDE CONSORTIUM

NetIDE consortium

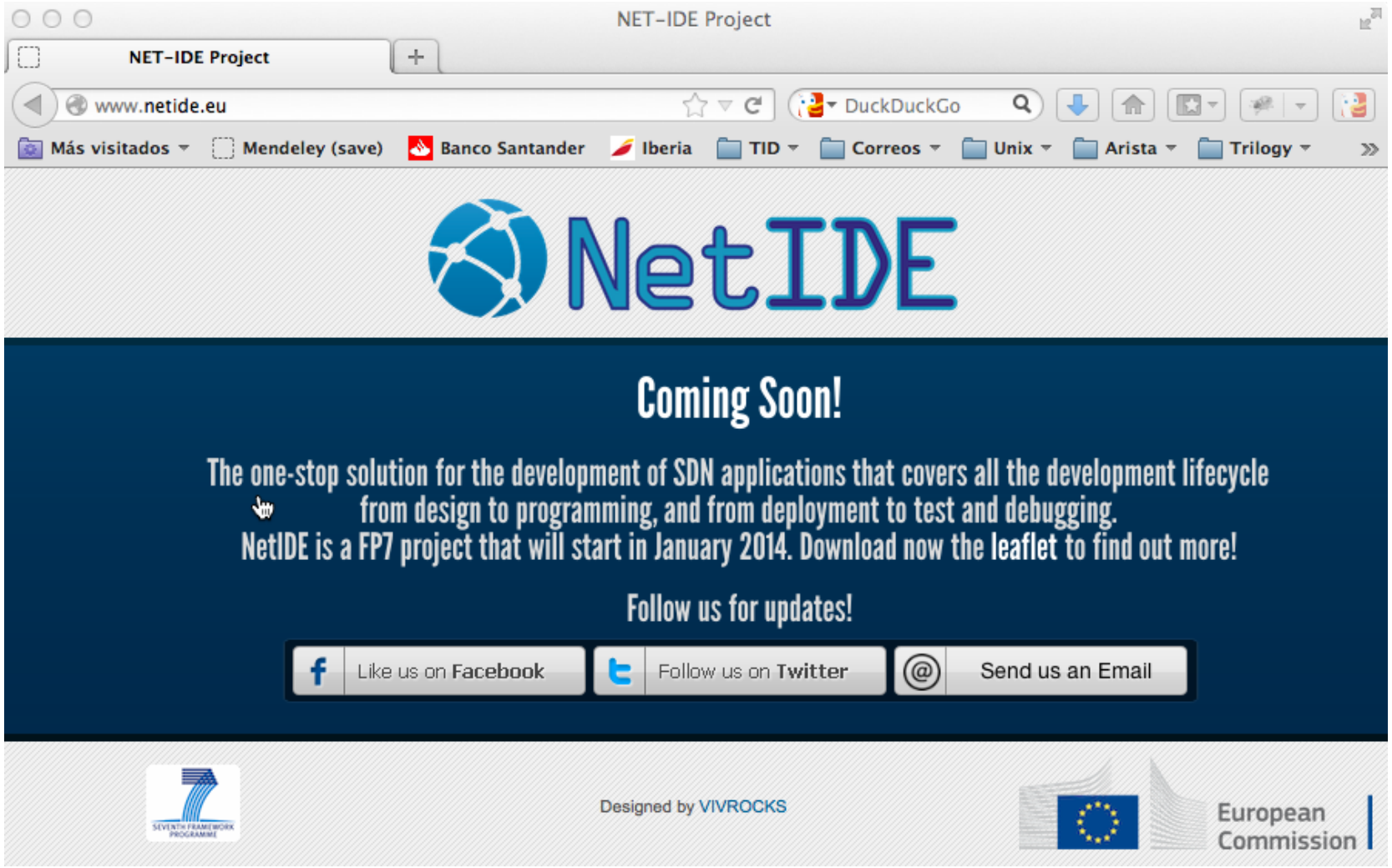


CONCLUSION

Conclusions

- The fragmentation in the current SDN landscape is deterring new entrants
  - Steep learning curve
  - Design once, write many times, execute never
  - Necessary development tools missing
- NetIDE tackles the problem offering a rich, unified network application development environment
  - Regain the ‘write once, execute anywhere’ paradigm for SDN
  - Provide next generation application development tools
- EU-led effort with balanced participation
  - Knowledge and view-points from SDN developers and users

Keep posted, follow us!



Thank you!

Any questions or comments?

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