# Nex-G security and privacy: What is new?

Ratul Mahajan

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## Security

HW/SW bugs

→ Game changes b/c democratization

DDoS attacks

→ Same as now (modulo scale)

Configuration errors

→ Game changes b/c democratization

## Privacy

Metadata privacy

→ Same as now (modulo bugs)

Content privacy

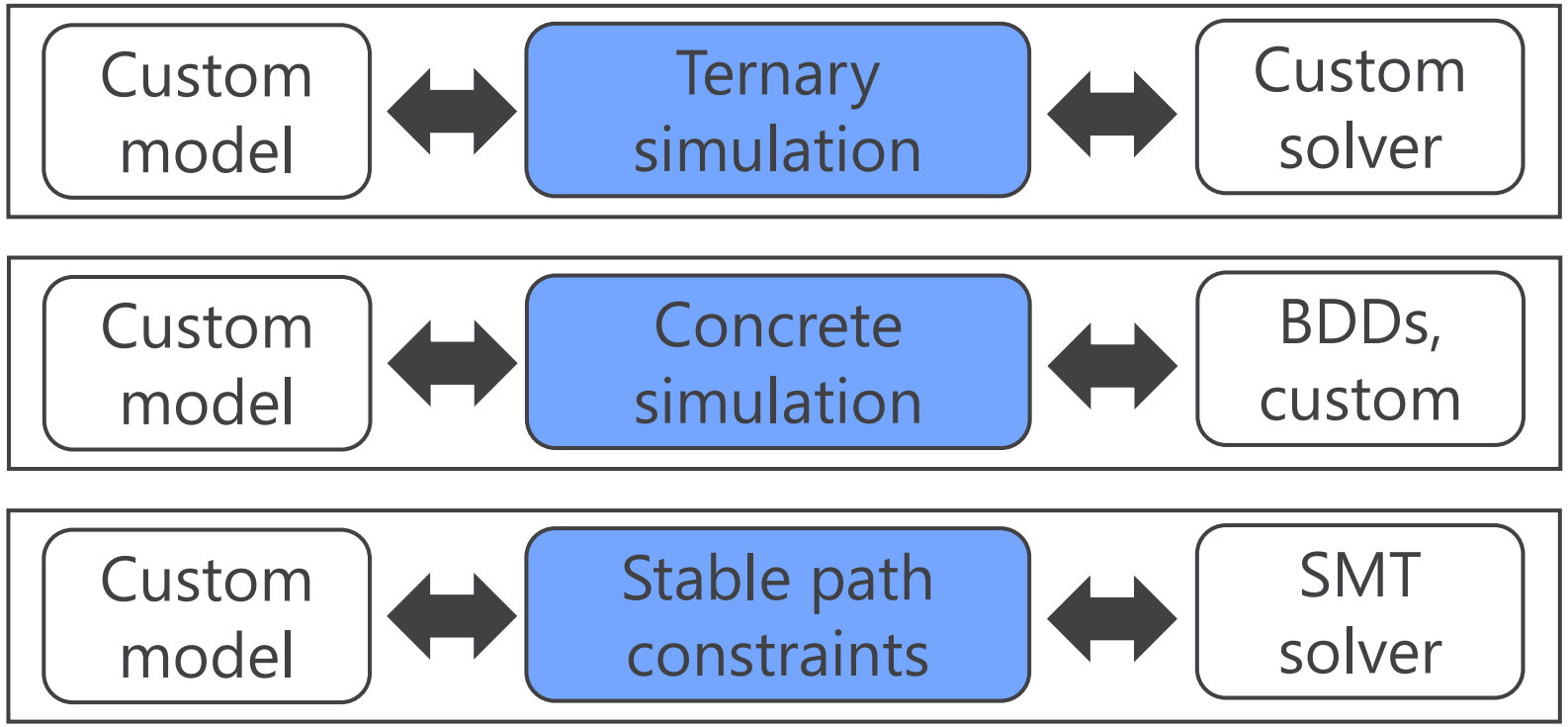
→ Same as now (modulo bugs)

# Network verifiers today are monoliths

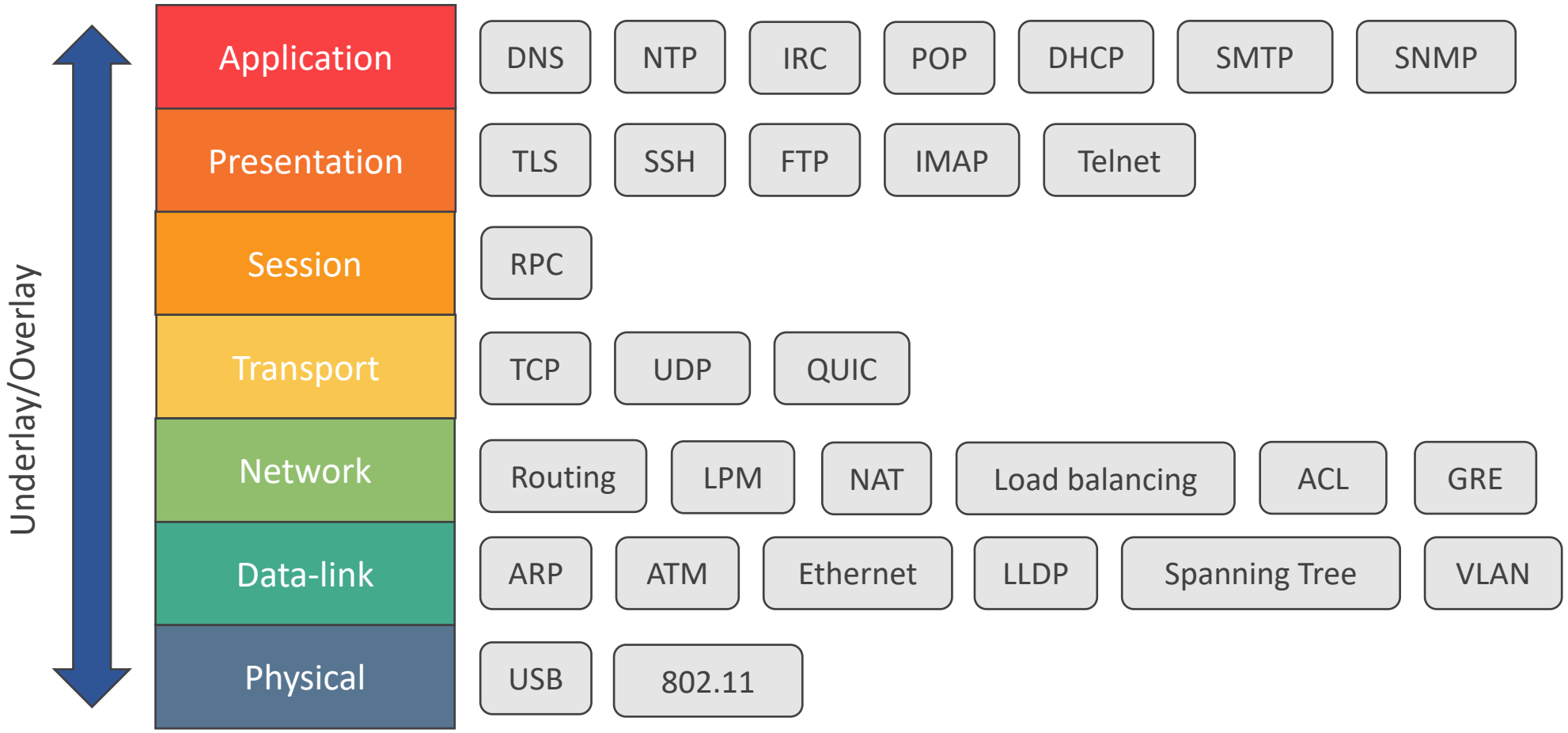
**Header Space Analysis**
Stateless forwarding

**Batfish Simulator**
Distributed Routing

**Minesweeper**
Distributed Routing



# Networks have a LOT of functionality

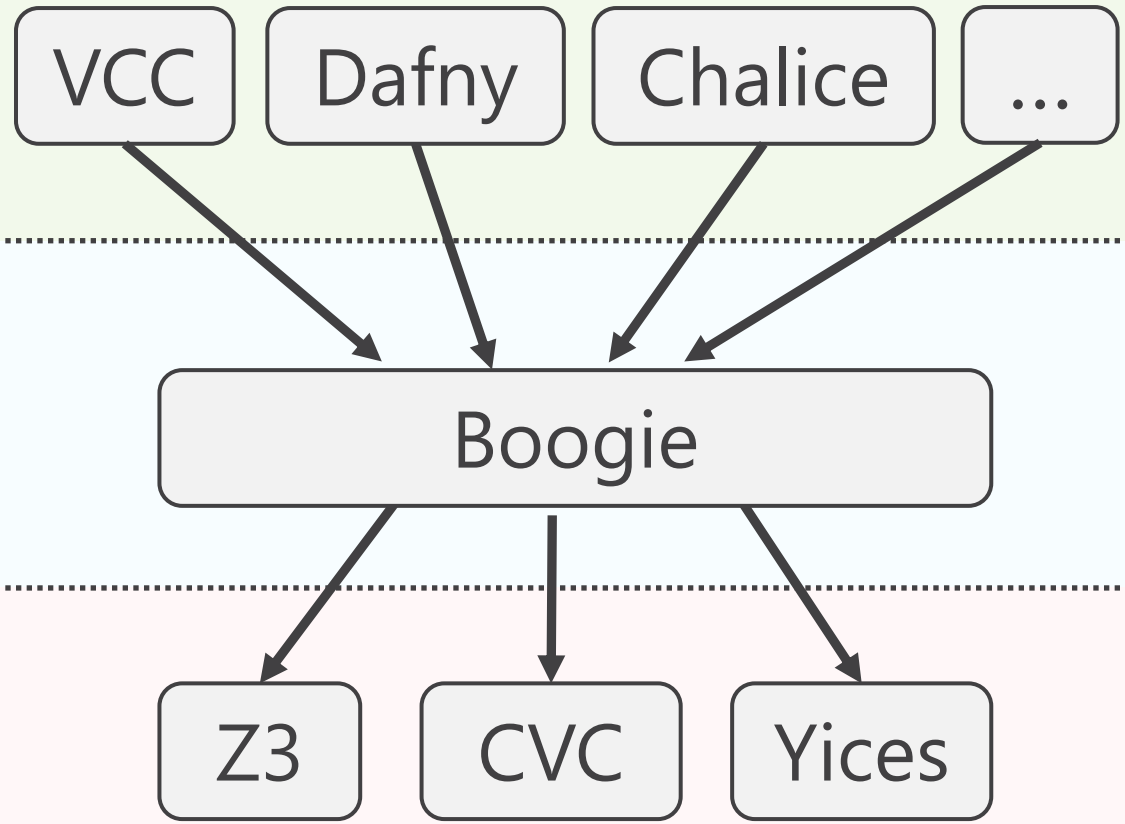


# How software verification tackles this

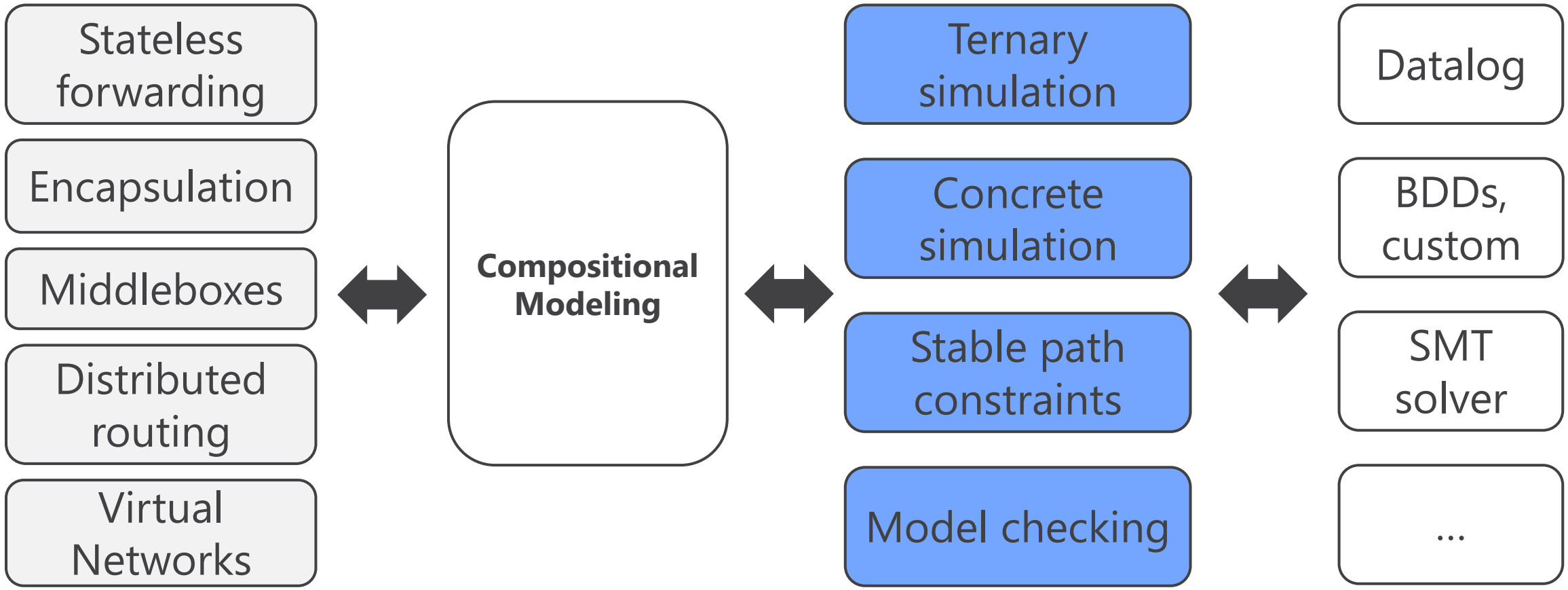
Front-end

Intermediate Language

Back-end



# How we should model and analyze networks




Ryan Beckett and Ratul Mahajan, “A general framework for compositional network modeling,”, HotNets 2020