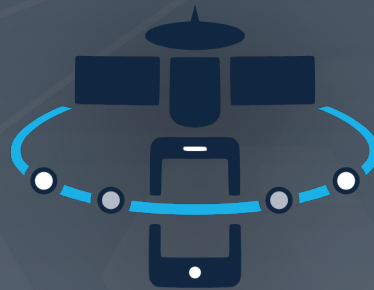


D3-CONNECT & Modeling session



D3-CONNECT

Democratized Direct-to-Device Satellite Communication Networks

An Inria – UC Berkeley Associate Team, 2025–2027

📅 Tuesday 15 September 2026 · 13:30 📍 STINT 2026, Leuven

Juan A. Fraire · Inria Lyon, Agora

Who gets to run a satellite network?

Direct-to-device is arriving, and it is consolidating fast around a handful of very large operators.

Phones are starting to talk to satellites directly. The constellations that make this work are **expensive, vertically integrated, and few**.

D3-CONNECT asks what it would take for **smaller actors** to take part: shared infrastructure, open models, and honest accounting of what a satellite can actually deliver.

3

YEAR PROJECT

2

CONTINENTS

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PAPERS PUBLISHED

2

PHD STUDENTS

Inria

Berkeley
UNIVERSITY OF CALIFORNIA

The team

An Inria Associate Team: Inria Lyon (Agora) with the NetSys group at UC Berkeley, plus Virginia Tech.



Juan A. Fraire

Inria Lyon – Agora

PI, Inria



Sylvia Ratnasamy

UC Berkeley – NetSys

PI, Berkeley



Scott Shenker

UC Berkeley – NetSys / ICSI

PI, Berkeley



Wesley Woo

Virginia Tech

Speaking next



Tenzin S. Ukyab

UC Berkeley

Speaking next



Shaddi Hasan

Virginia Tech

Collaborator

Three questions we are working on

One team, three angles on the same problem: what a shared D2D constellation can really carry.

Does Starlink close the digital divide?

No. Coverage was never the binding constraint. Capacity and affordability are.

HotNets '25 · Woo et al.

Is the cone model lying to us?

Yes, by tens of percent. A satellite has a finite number of beams, each with finite capacity.

LEO-NET '26 · Woo, Ukyab et al.

Can operators share a constellation?

Up to a point. A closed-form law sets the tenant ceiling, and deployed fleets already sit near it.

Journal article in preparation

The common thread: **model the satellite as the hardware it is**, then see which architectures survive.

Up next in this session

Two invited talks from the Associate Team, then a modeling paper. Tuesday 13:30–14:45, chair: Jorge Finochietto.



Wesley Woo

Virginia Tech

INVITED · 20 MIN

"Anyone, Anywhere, not Everyone, Everywhere: Starlink Doesn't End the Digital Divide"



Tenzin Ukyab

UC Berkeley

INVITED · 20 MIN

"Beyond the Cone Model: Quantifying the Impact of Beam-Level Constraints on LEO Satellite Networks"

PAP

Konrad Fuger et al. · *Modeling the Performance of Priority Queueing for Space Communication* 20 min

Come find us in the breaks · d3-connect.space

Thank you



d3-connect.space

Inria Lyon · UC Berkeley · Virginia Tech

Up next: Wesley Woo · Virginia Tech

"Anyone, Anywhere, not Everyone, Everywhere: Starlink Doesn't End the Digital Divide"