



Deterministic Networking for the Industrial IoT

- Monitoring the Snow Melt Process in the Sierra Nevada
- Monitoring Frost Events for a Peach Orchard in Mendoza

Keoma Brun-Laguna, Thomas Watteyne, Pascale Minet

EVA team - (brand new!) Inria-Paris & REALMS associate team

<https://kbl.netlib.re/blog/>

RESCOM days, Inria-Lille, 13 January 2016

(Long-term) Goal of my Research

- Study the limits of TSCH networks
 - Can we achieve Control Loop ?
 - Network tuning impact on Energy Consumption ?
- We need connectivity information
 - FiT-IoT Lab
 - Real deployments

EVA Research Team

Wireless Networking for Evolving & Adaptive Applications

Thomas W.



Paul M.



Pascale M.



Jonathan M.



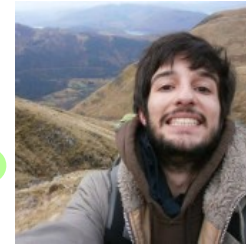
Tengfei C.



M. Vučinić



and many more !



Keoma B-L.

REALMS Associate Team

Real-Time Real-World Monitoring Systems, 2015-2017

Berkeley
UNIVERSITY OF CALIFORNIA



Prof. Steven Glaser
Prof., Systems Eng.
UC Berkeley

Prof. Branko Kerkez
Assist. Prof., Systems
U. Michigan

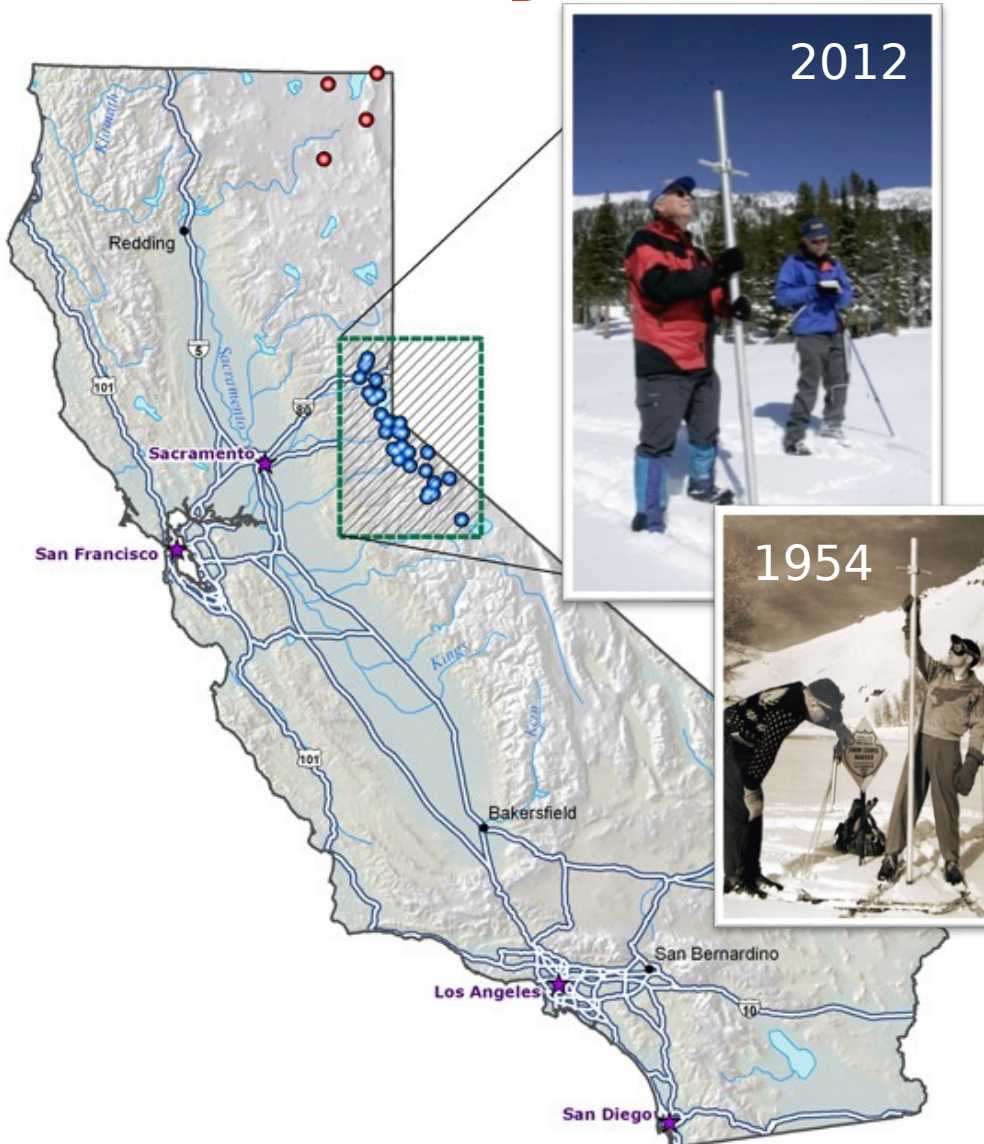


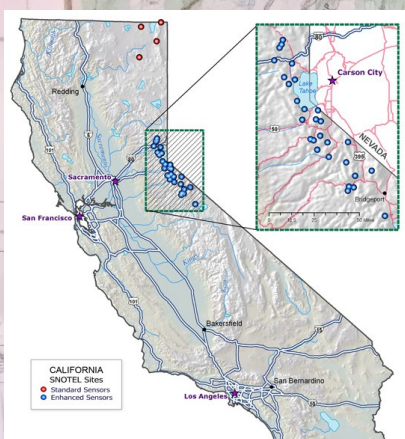
Equipe EVA - Keoma Bru

Goal

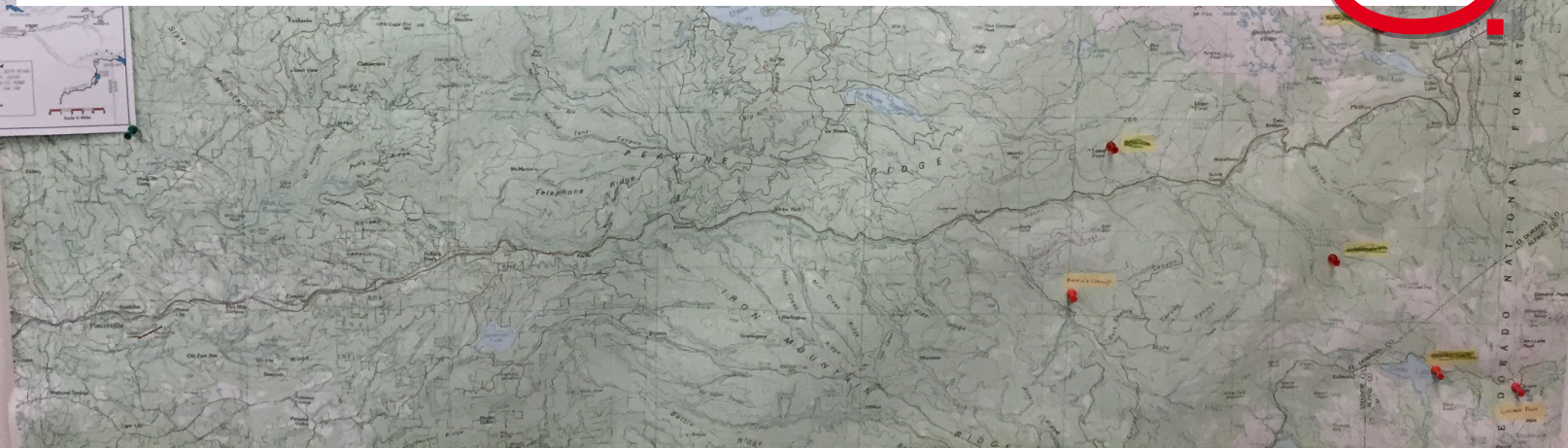
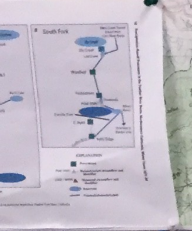
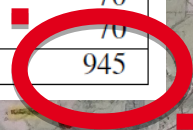
Monitor the Snow Melt Process in the Sierra Nevada Using Reliable Low-power Wireless Mesh Networks

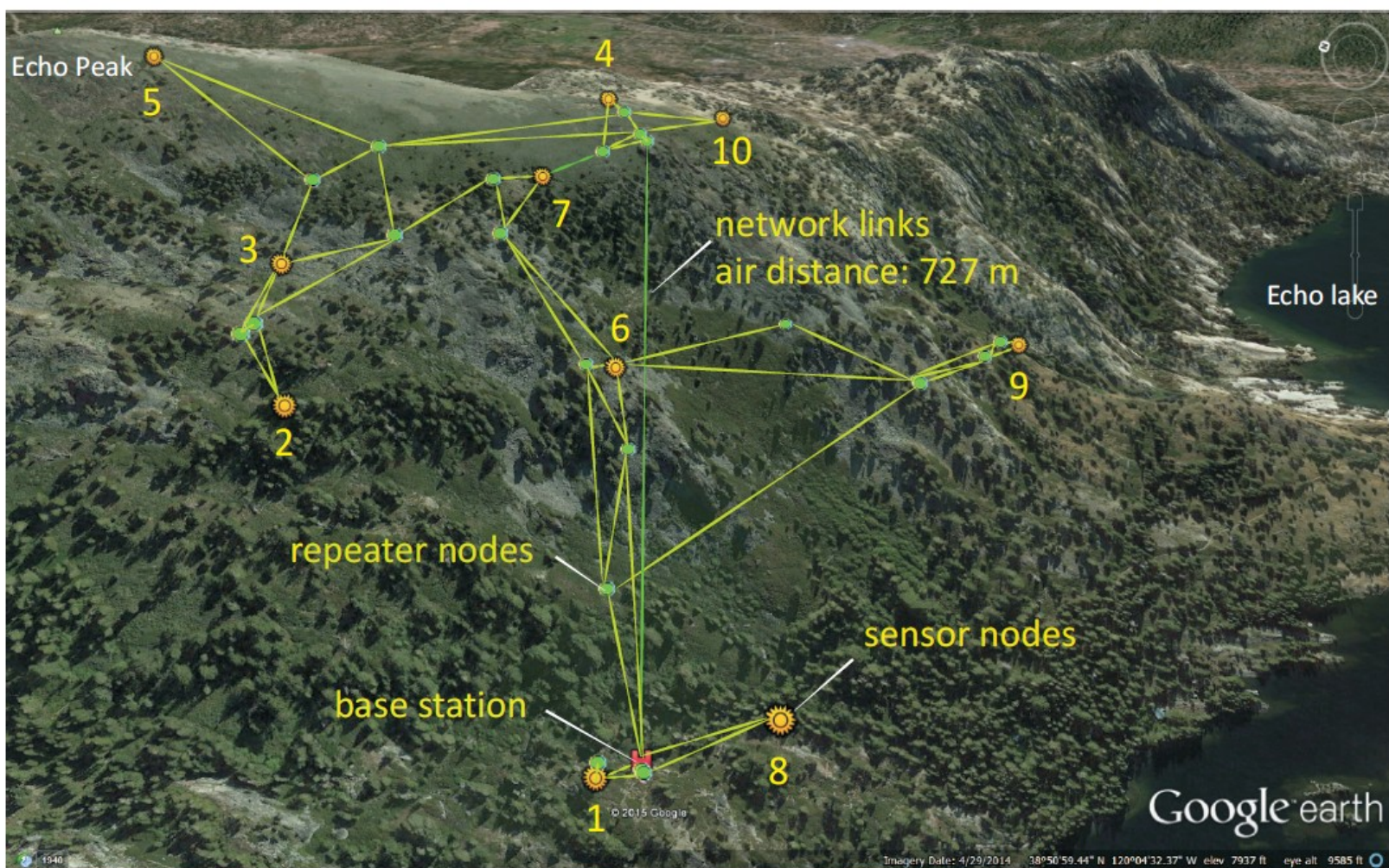
So, why snow?





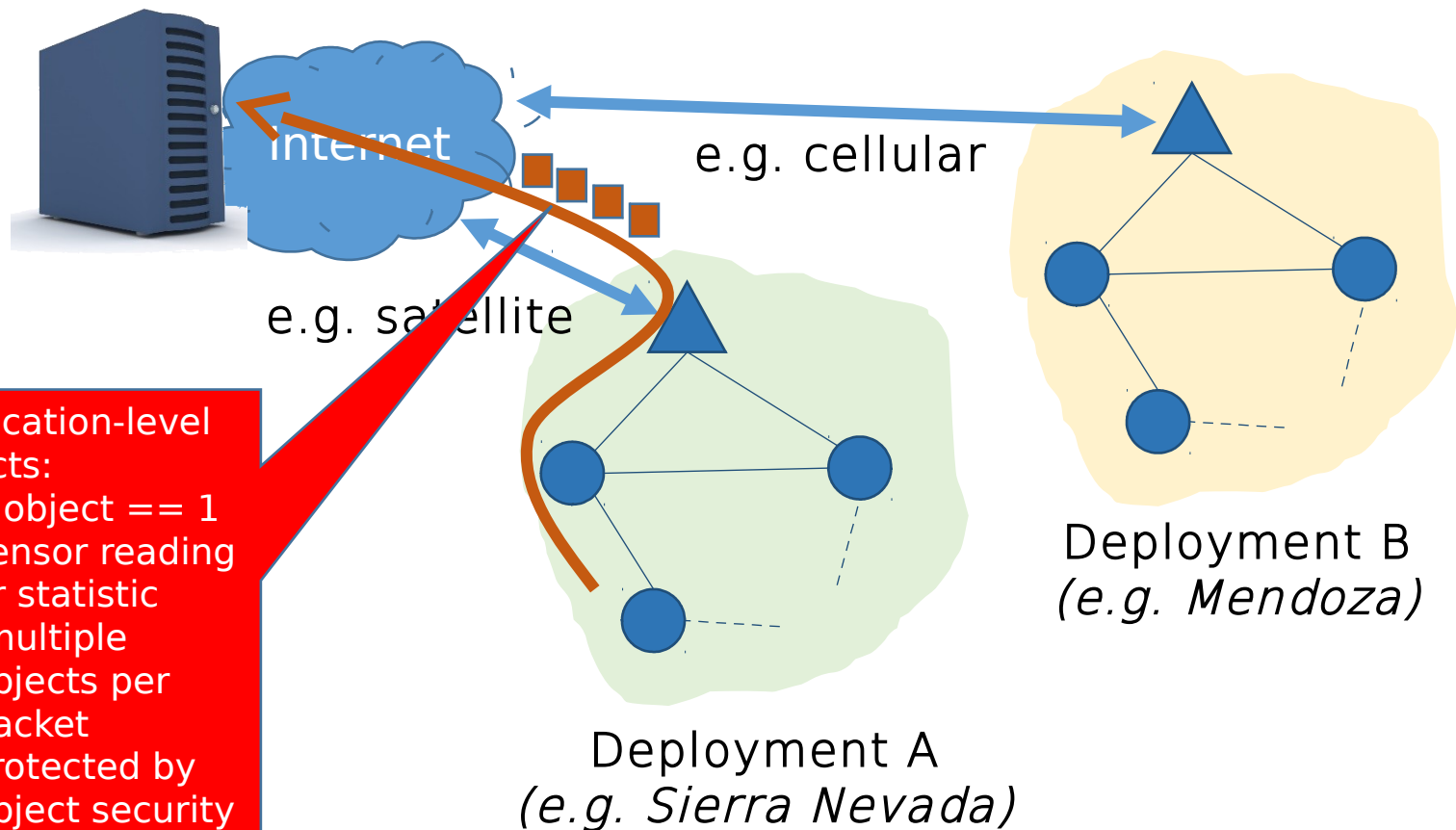
Name	Operational Since	Elevation (m)	# Devices (Managers/NeoMotes/Repeaters)	# Sensors
Alpha	2013	2269	37 (1/ 10/ 27)	70
Bear Trap	2013	1518	38 (1/ 10/ 27)	70
Caples Lake	2013	2437	37 (1/ 11/ 25)	79
Dolly Rice	2014	1980	11 (1/ 10/ 0)	70
Duncan Peak	2013	2907	42 (1/ 11/ 30)	78
Echo Peak	2013	2478	54 (1/ 10/ 43)	71
Mount Lincoln	2013	2477	36 (1/ 11/ 24)	78
Onion Creek	2013	1891	11 (1/ 10/ 0)	72
Owens Camp	2014	1586	24 (1/ 11/ 12)	77
Robbs Saddle	2013	1812	33 (1/ 10/ 22)	70
Schneiders	2013	2673	38 (1/ 10/ 27)	70
Talbot Camp	2014	1738	11 (1/ 10/ 0)	70
Van Vleck	2013	2069	38 (1/ 10/ 27)	70
Total			414 (11/134/264)	945





My contribution

Object-based end-to-end data and connectivity data management solution



PEACH SticAmSud

PrEcision Agriculture through Climate research



STIC Am-Sud

PrEcision Agriculture through Climate research, 2016-2019



Prof. Diego Dujovne
UDP



Gustavo Mercado
UTN



Goal

Monitor the Weather and predict
Frost Events





Thank you

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 - Real deployment (Sierra Nevada and Mendoza orchards)