

FaNTaS: Fast Network Formation for 6TiSCH Networks at Large Scale

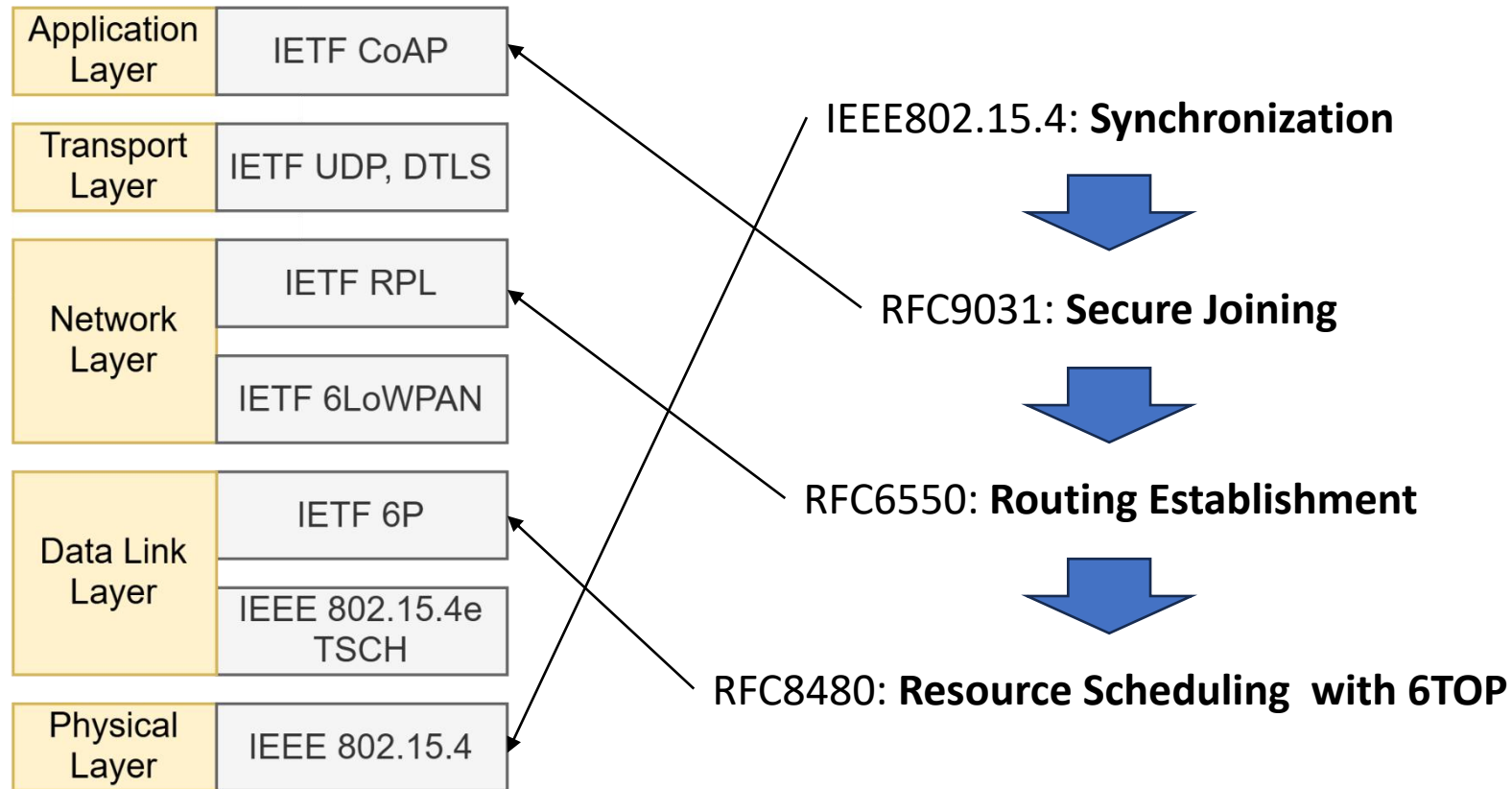
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Joining Procedure of 6TiSCH

IoT will be at scale of millions to trillions!

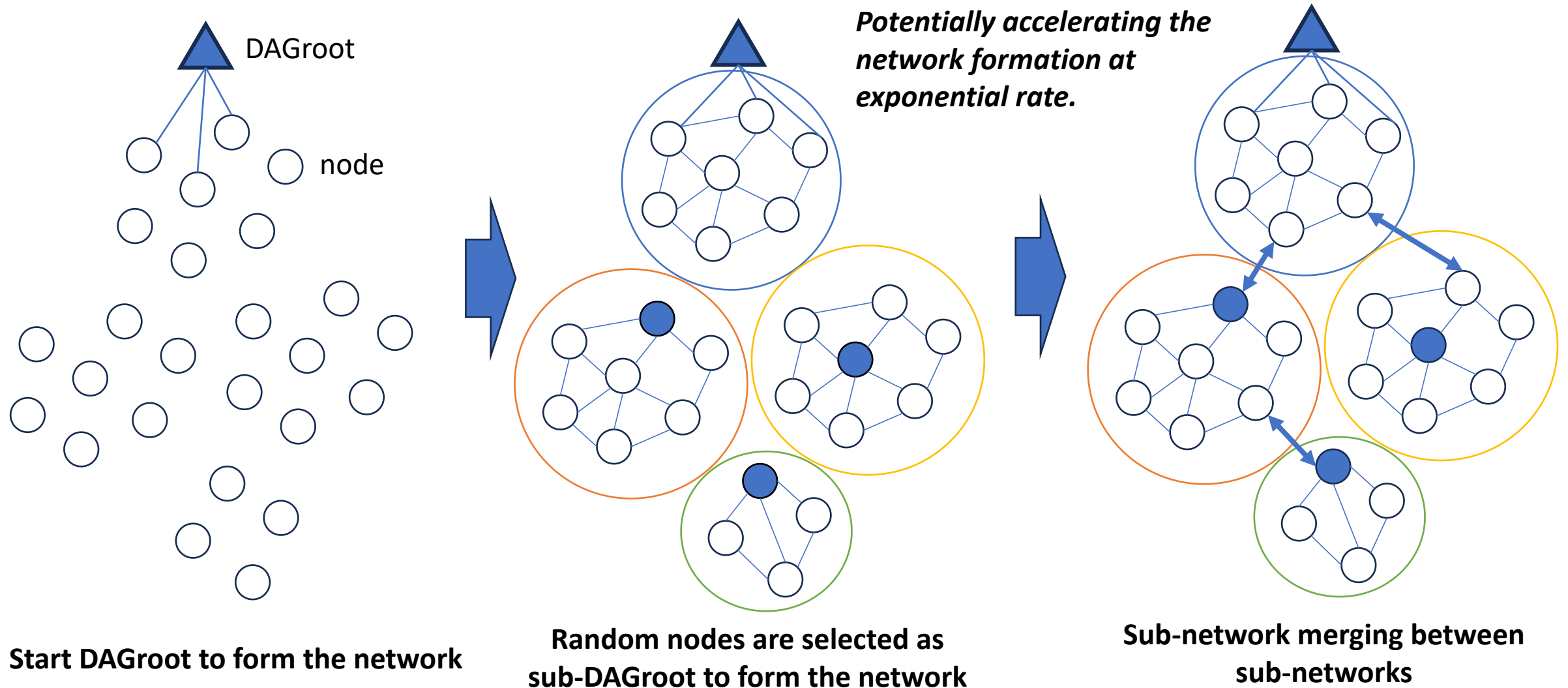


6TiSCH stack

The joining procedure of 6TiSCH follows a sequence actions, meaning the next stage can only happen when previous stage is reached.

Full network up time at a scale of hundreds to 1000s takes hours!

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Sub-Tasks and Actions

Tasks

- Selecting the sub-DAGroot
- Merge two in-synchronized sub-networks
- Merge two separated sub-DAG in routing
- Update the scheduling after merging

Actions

- Designed algorithm to select sub-DAGroot and merge in-synchronized sub-networks
- Evaluating Through 6TiSCH Simulator
 - Update the simulator architecture
- Implement the sub-routing info
- Implement update the scheduling after merging

Related Resource

- **Architectural Updated:** Refactored the existing 6TiSCH simulator engine to support multiple concurrent networks
 - It allows different sub-nets and network with different clock offsets exist simultaneously.
 - Github: <https://github.com/LYuanMing/6TiSCH-MultiNet-Simulator>

Thanks!

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