



IETF 6TiSCH activity

IPv6 over IEEE 802.15.4e

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Some drawings contributed to by M.R. Palattella

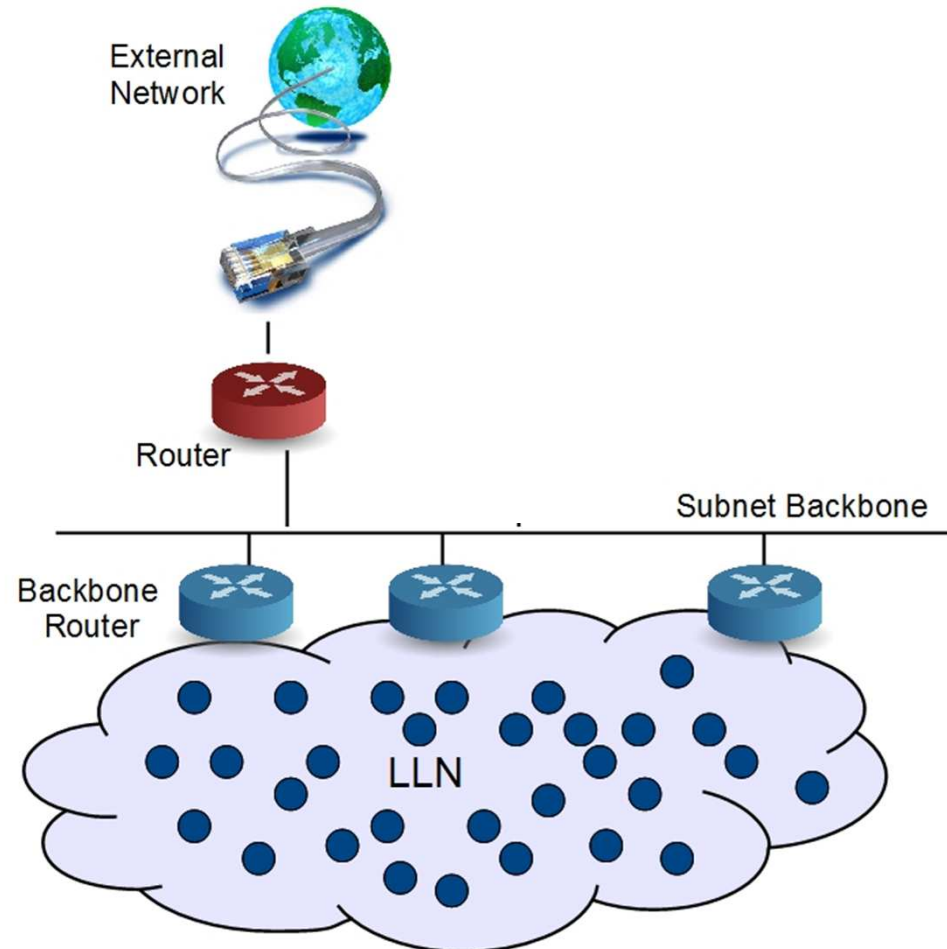


6TiSCH: a new Working Group at IETF

- Enable the operation of IPv6 networks of constrained nodes over IEEE 802.15.4e TSCH radios
- 15.4e TSCH specifies the frame exchanges when things work
 - does not specify how to get things working
- Many degrees of freedom
 - so far addressed in non-IETF environments
 - Dust SmartMesh, ISA100, WirelessHART
- 6TiSCH aims at providing an IETF-compliant toolbox

First 6TiSCH charter

- Distributed routing (RPL)
- Static schedule
 - pre-configured or
 - learnt during startup
- Potentially multiple RPL DODAGs federated over a backbone



6top: Filling a gap in the control plane

	CoAP
TCP	UDP
IPv6	
6LoWPAN HC	
802.15.4e TSCH	
802.15.4 PHY	

data plane

SNMP	CoAP
UDP	
RPL/ICMP	
6LoWPAN ND	
6top	

control plane

Work items

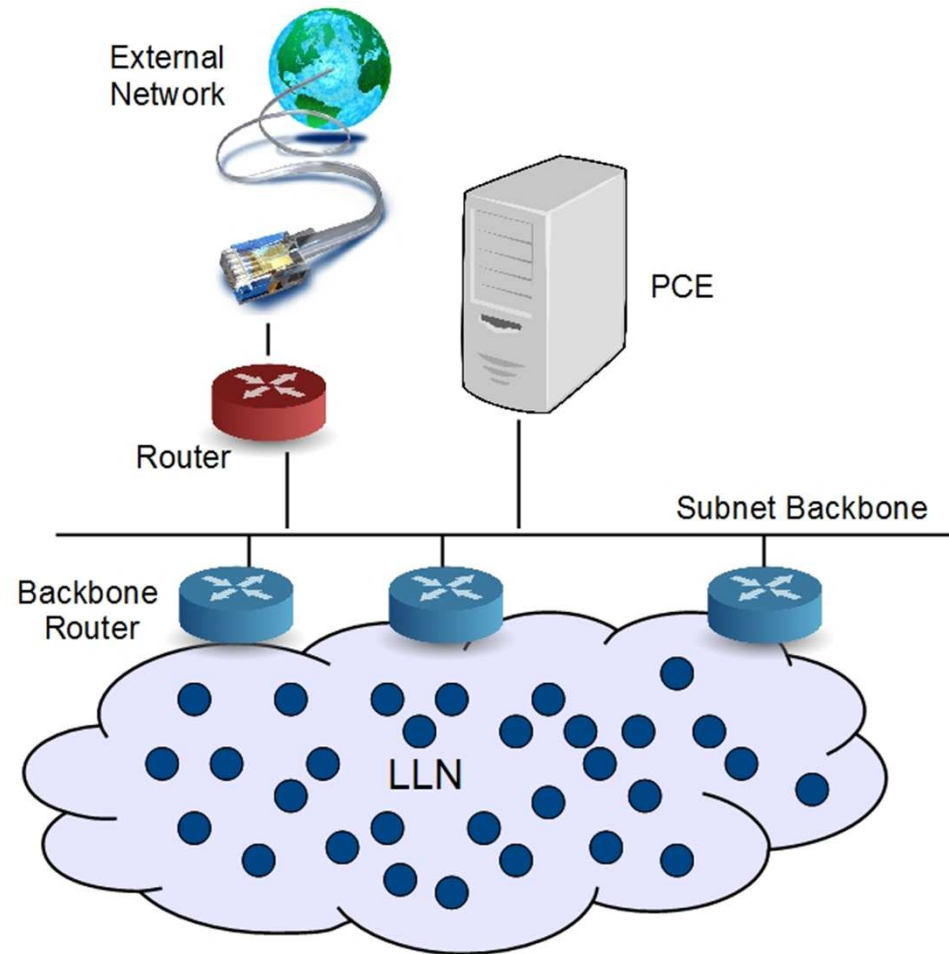
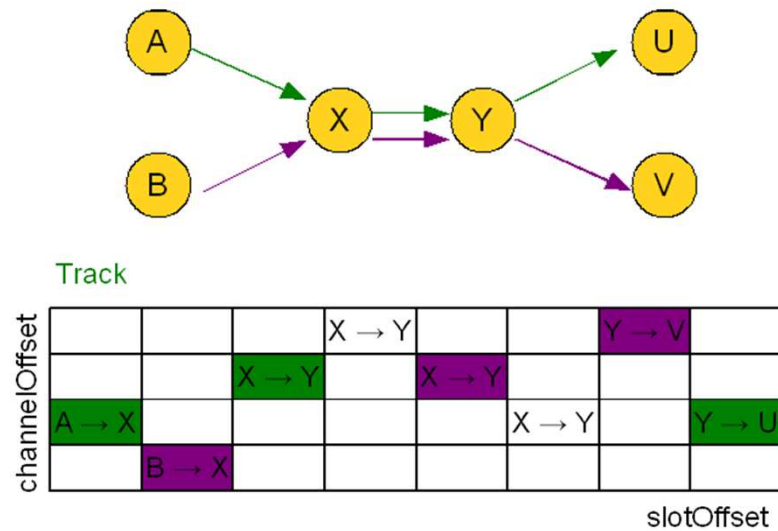
- Define a sensible “minimal” configuration
- Specify what metrics are reported to routing and how
- Specify how schedules are configured from upper layer
- Specify 6top layer management
- Specify how a federation of DODAGs works
 - seamless “handover” of nodes between DODAGs
 - without renumbering, single prefix from BBR downward
 - some work under 6man Working Group

Current status

- Working Group charter
 - <http://tools.ietf.org/wg/6tisch/charters>
- Problem statement
 - <http://tools.ietf.org/html/draft-ietf-6tisch-tsch-00>
- Terminology draft
 - <http://tools.ietf.org/html/draft-ietf-6tisch-terminology-01>
- Minimal configuration
 - <http://tools.ietf.org/html/draft-ietf-6tisch-minimal-00>
- Architecture
 - <http://tools.ietf.org/html/draft-ietf-6tisch-architecture-01>
- 6top sublayer interface
 - <http://tools.ietf.org/html/draft-ietf-6tisch-6top-interface-00>

Future work (requires new charter)

- Centralized routing (PCE)
- Dynamic scheduling
- G-MPLS-like switching



Questions ?

