

PAW

# IEEE 802.15.4 TSCH / 6TiSCH Tracks

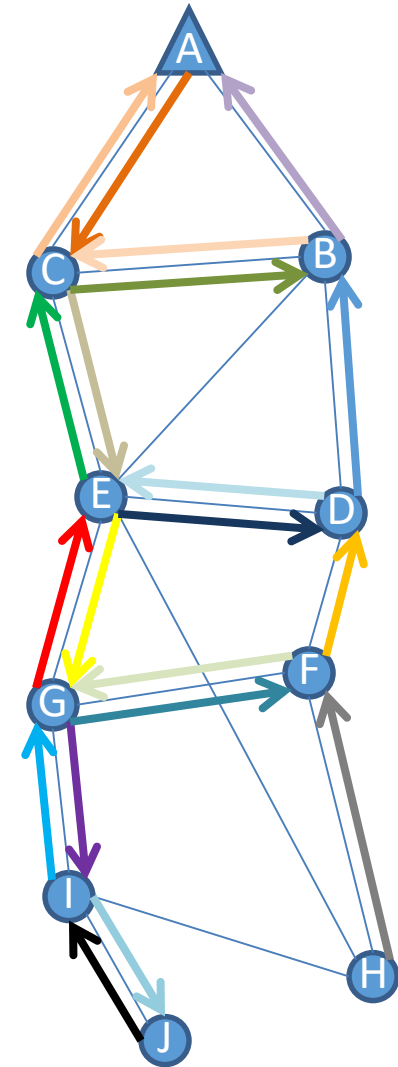
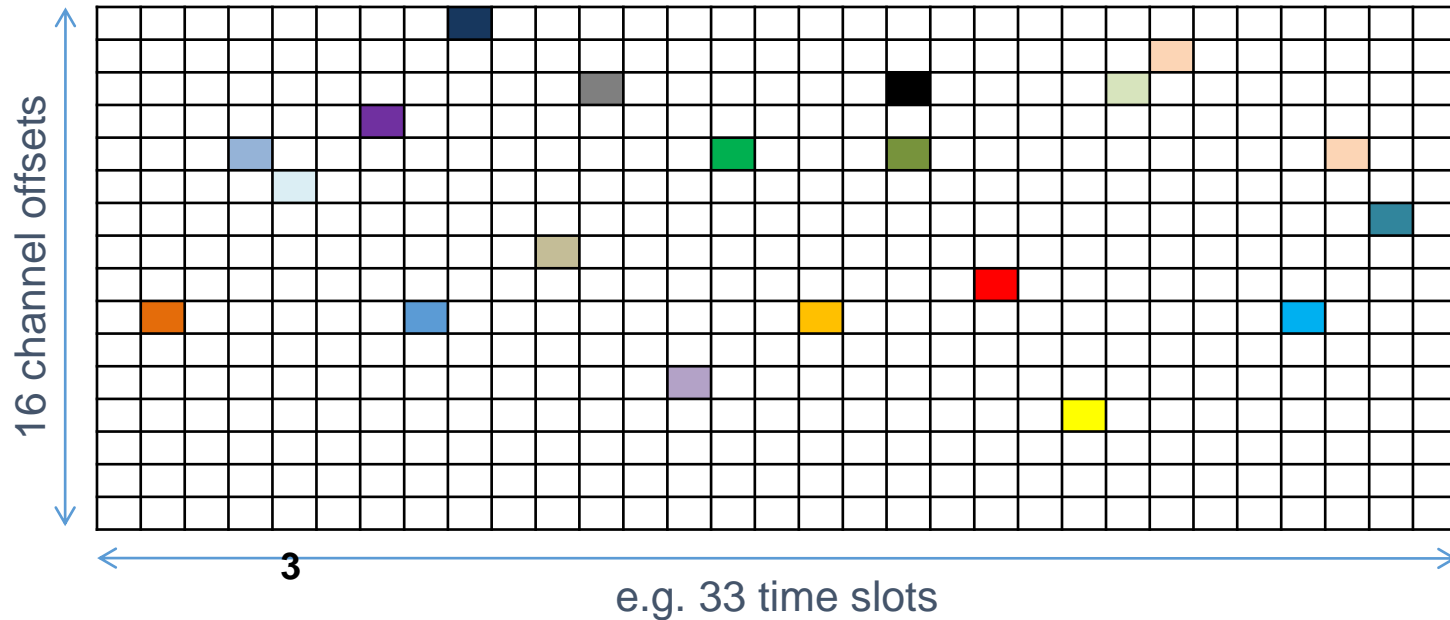
Presenter: Xavier Vilajosana  
Universitat Oberta de Catalunya

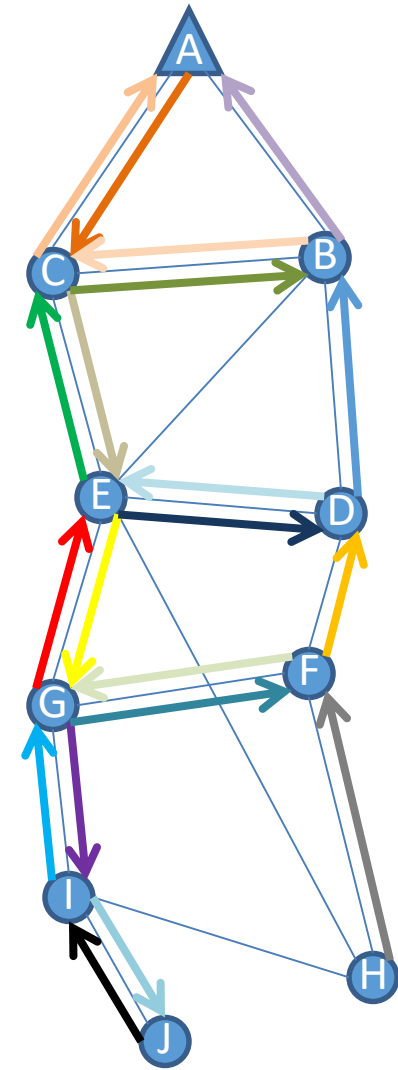
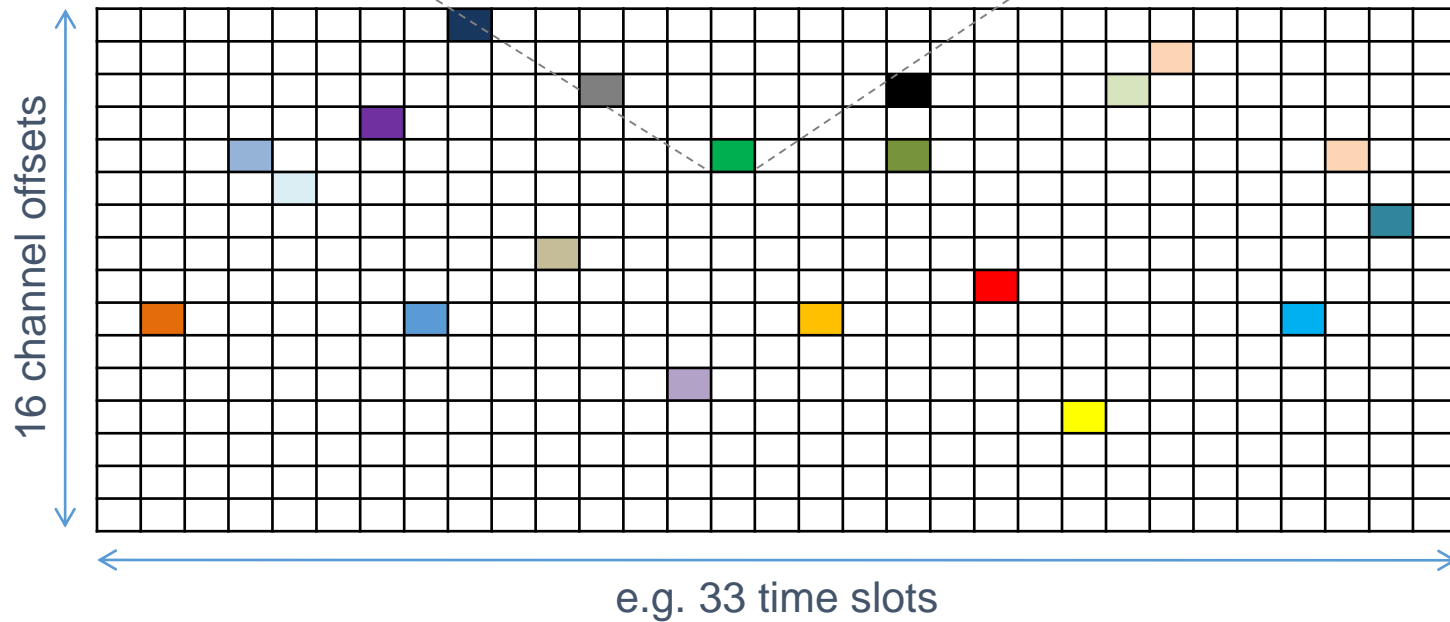
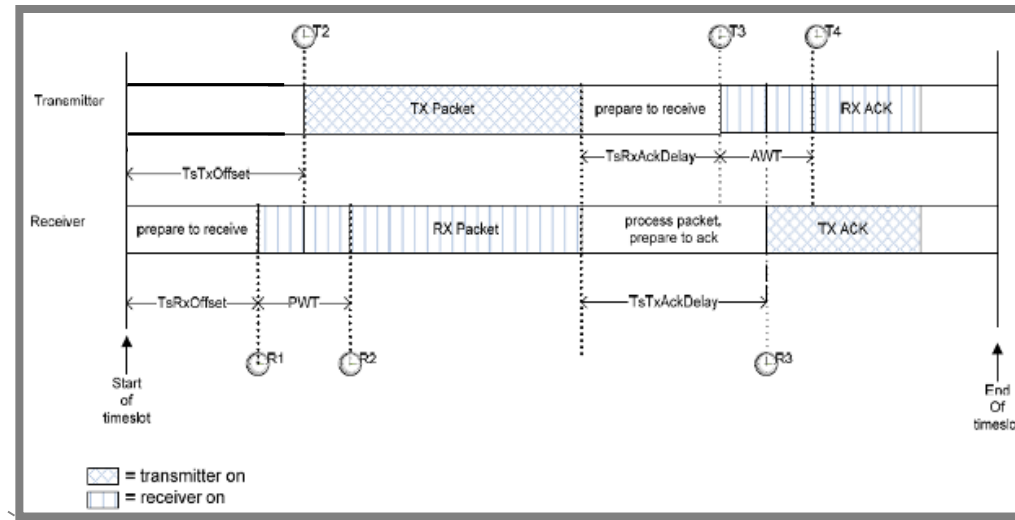
# Tracks and increasing determinism

- Overview of 6TiSCH
- Label switching on 6TiSCH
- Tracks at 6TiSCH

# Time Synchronized Channel Hopping

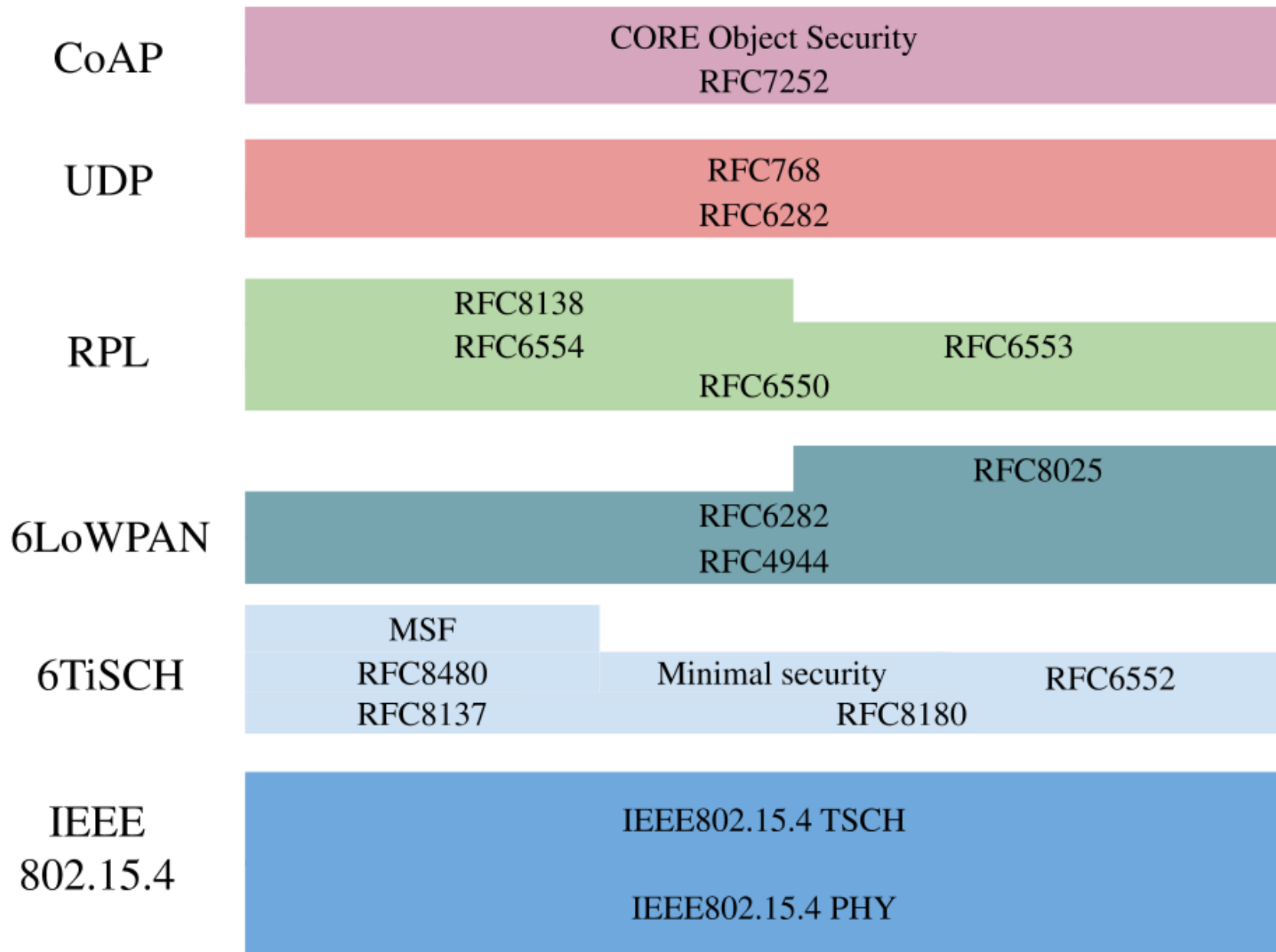
- Motes are synchronized
- Communication follows a schedule
- Schedule gives tunable trade-off between
  - packets/second
  - latency
  - robustness...and energy consumption





# 6TiSCH

- Distributed cell management
- Secure join procedure
- Scheduling policy
- Improved header compression
- ....

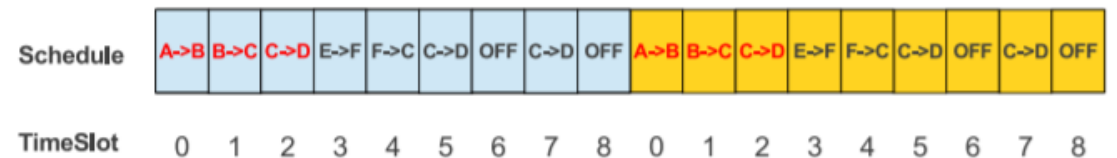
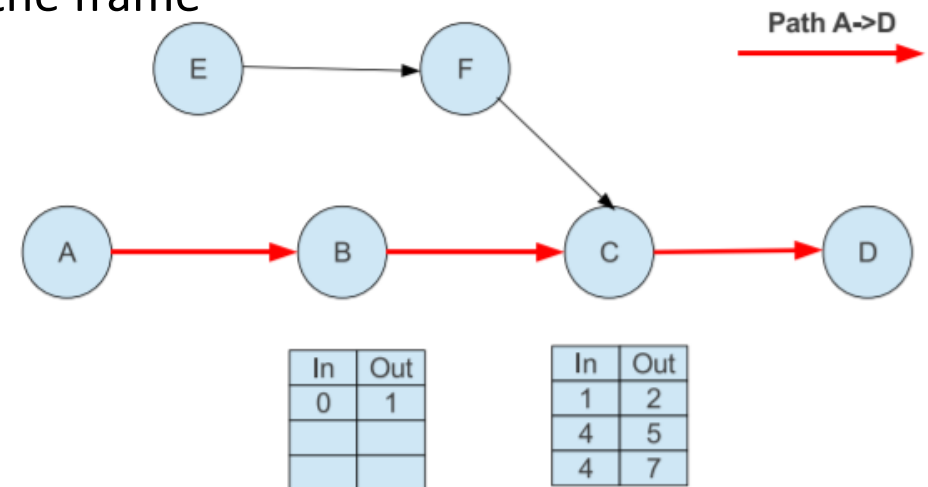


# Label Switching on 6TiSCH

- The L2 slotted structure of 6TiSCH enables L2 forwarding
- L2 forwarding can be implemented based on labels
- GMPLS enables implicit labels so no overhead is added to the frame

## GMPLS

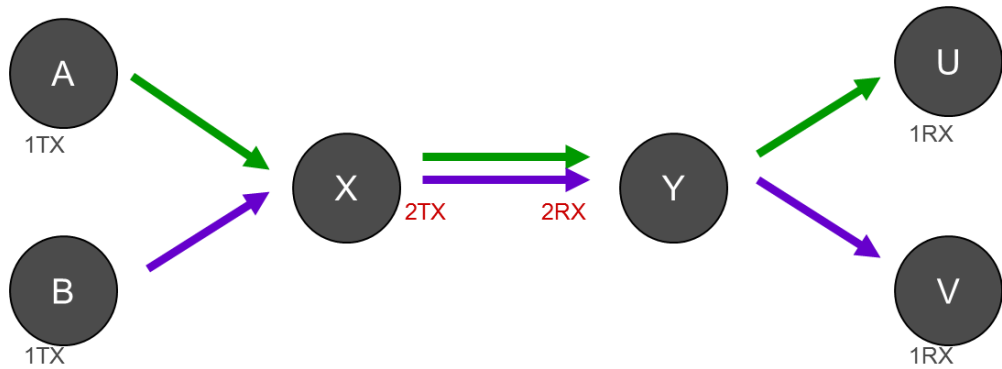
- Implicit labels -> In-out cell pairs
- Requires
  - The definition of the track based on a route/s
  - The definition of the forwarding table
    - Borrow ideas from RSVP-TE, NSIS, LDP...



## Tracks in 6TiSCH

- **Track:** A determined sequence of cells along a multi-hop path. It is typically the result of a track reservation. The node that initializes the process of establishing a track is the owner of the track. The latter assigns a unique identifier to the track, called TrackID.

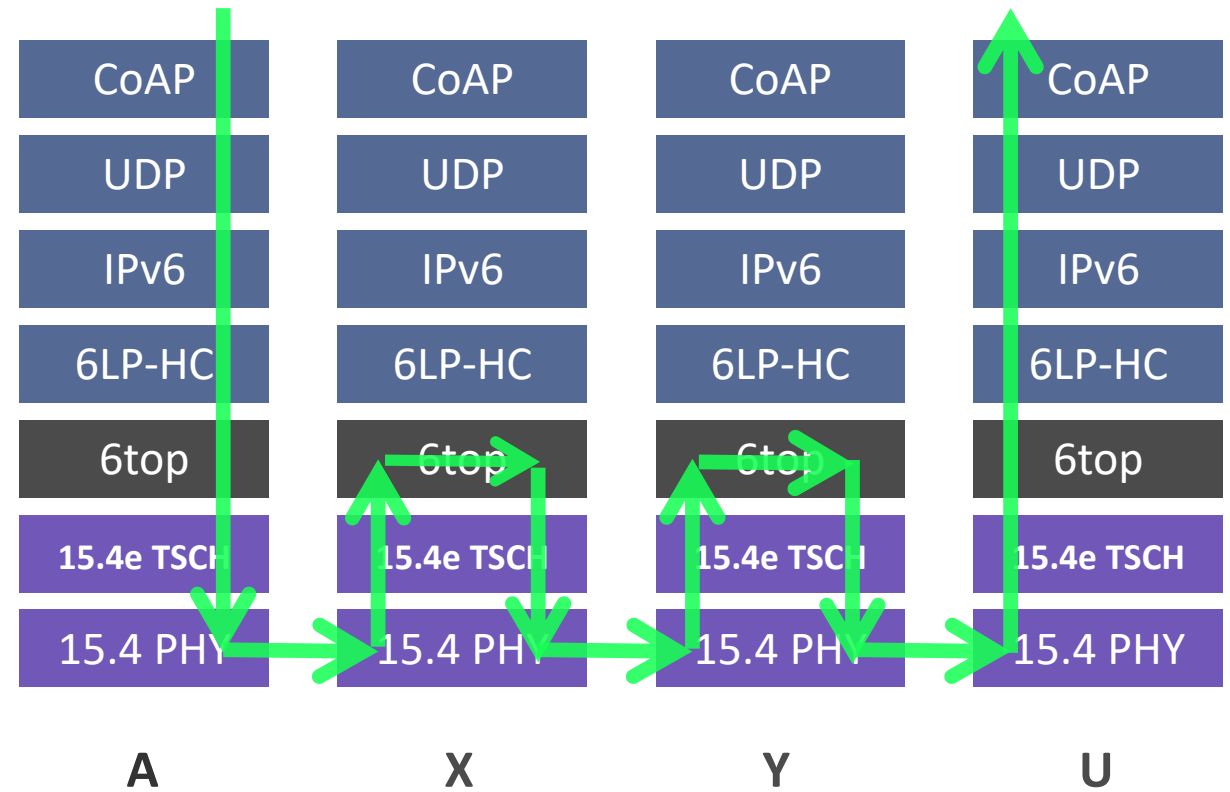
# Track Switching (G-MPLS) in Transport Mode



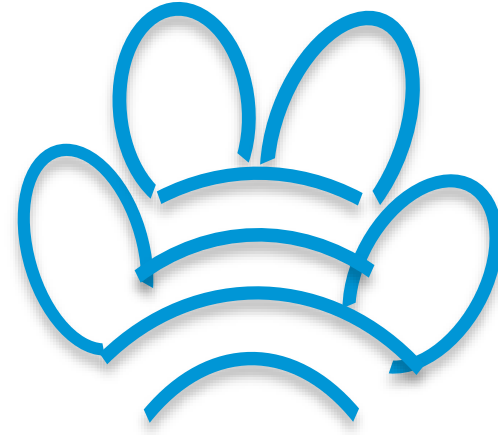
Track

			X → Y			Y → V	
		X → Y		X → Y			
A → X					X → Y		Y → U
	B → X						

slotOffset







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Thanks!

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