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NETWORKING

Mirror On Drop in SAI

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Agenda



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- Mirror On Drop
- Stateful and Stateless MoD
- MoD object in TAM

Mirror On Drop - Problem



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- ❑ Packets MAY get dropped for many reasons in network
 - ✓ H/W fault – Parity errors etc
 - ✓ Link capacity and bottlenecks
 - ✓ Network congestion
 - ✓ Incorrect FEC
 - ✓ Explicit rules
 - ✓and many many more



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Mirror On Drop - Problem



NETWORKING



- ❑ Very hard for administrator to figure out where and why packets are dropped in the network
- ❑ NOS keeps track of dropped packets by keeping track of hardware drop counts
- ❑ Impact of drop is very hard to qualify on an application

Mirror On Drop - Stateless



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- ❑ Simple solution is to trap dropped packet, drop reason and send the packet (with drop reason) to external collector or local NOS
- ❑ Provides atomic information about the drop and the packet
- ❑ Do not provide information about the lifecycle of drop as an event for a given flow

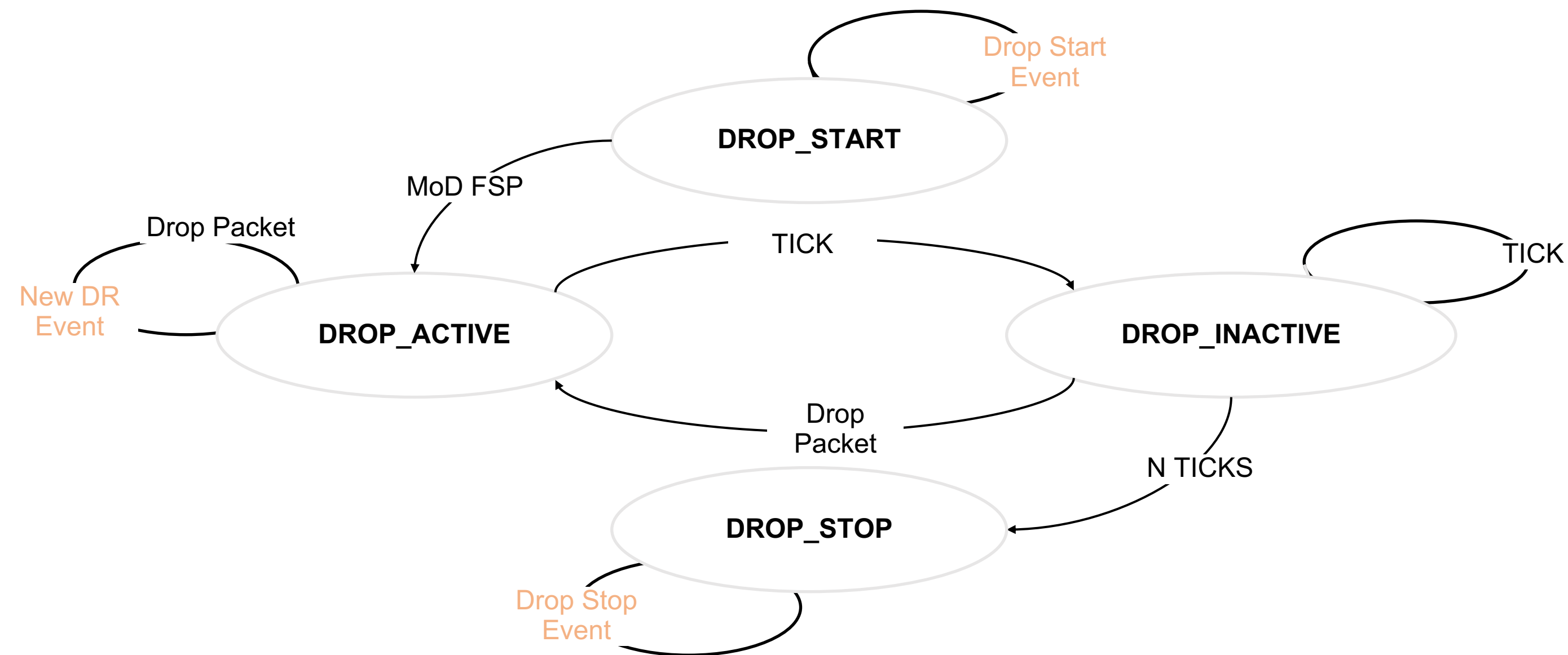
Mirror On Drop - Stateful



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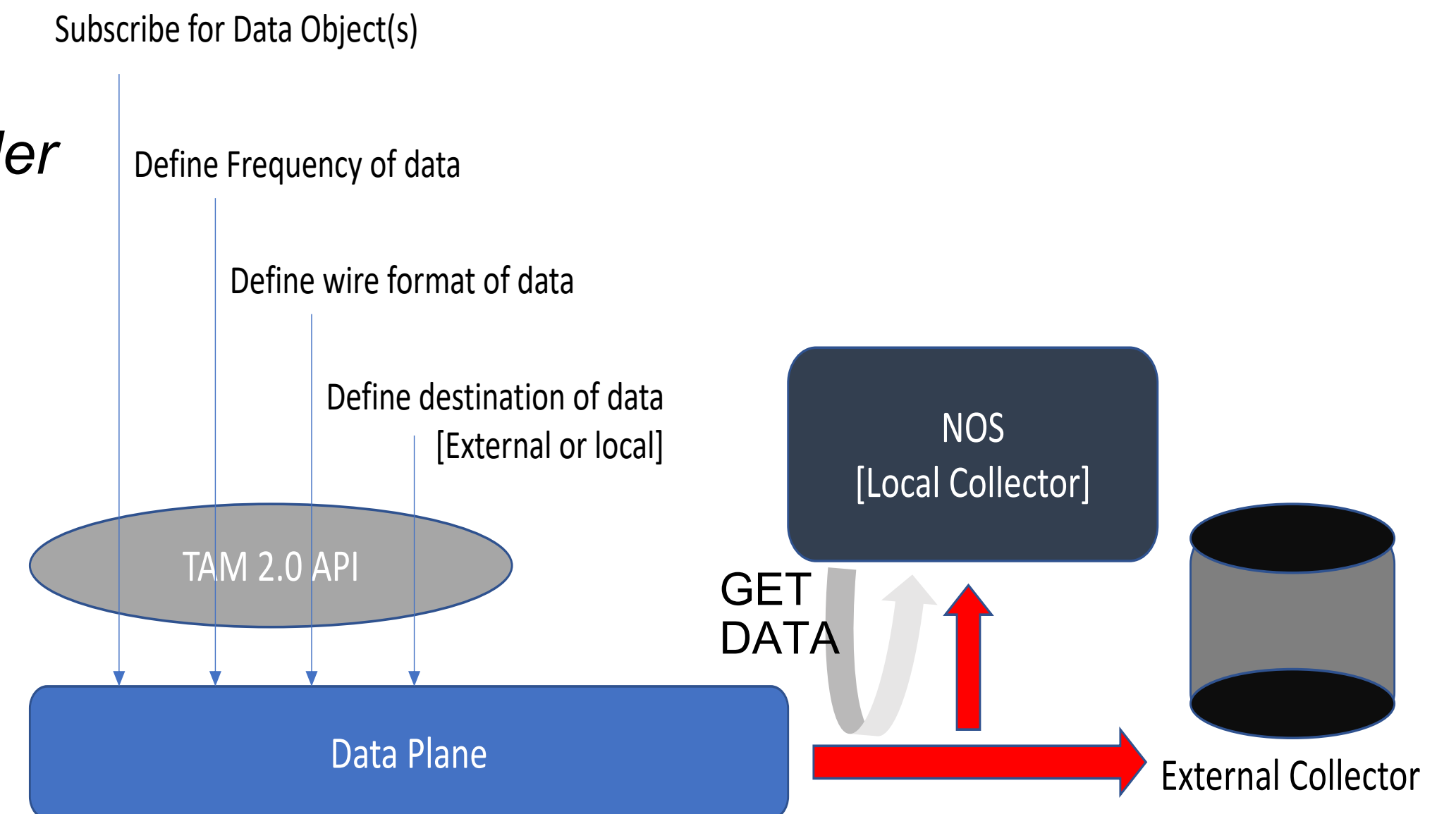


- ❑ Keep track of per flow per drop reasons drops
- ❑ Flow or Flow group can be monitored explicitly for any or set of drop reasons
- ❑ Flow has a clear life drop event lifecycle

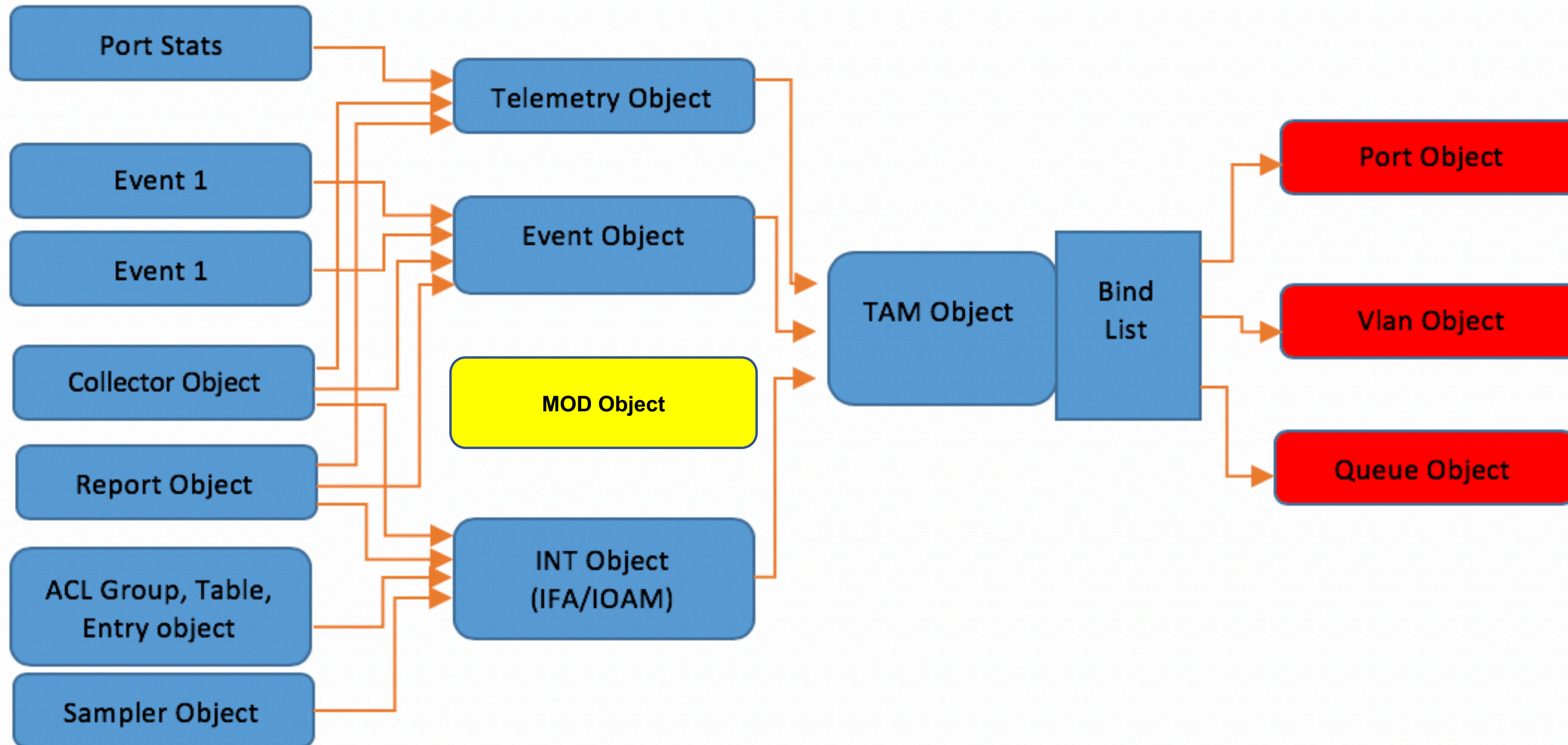


SAI TAMv2 Architecture

- **Generic TAM Objects**
 - *Telemetry Streaming object is a collection of data, transport, report and collector*
 - *All telemetry data is characterized in single consistent way*
- **Generic Reporting**
 - *Data serialization used to parametrize a report*
 - *Reporting object consists of serialization protocol*
 - *Serialization/Deserialization is done using protocol compiler*
 - *Seamlessly consumed by collector*
- **Generic Event Framework**
 - *All events are a collection of event type and action*
 - *Event action can be report or a feedback loop*
- **Mixed vendor deployment**
 - *No chip specific API*
 - *Extensible Telemetry object, report types, and events*
- **Advanced analytics**
 - *Thresholding, triggered streaming (threshold breach)*
 - *Running average/mean/mode*
 - *Histograms*



SAI TAMv2 Architecture....contd



TAM as a Unified Object

Mirror On Drop in SAI



NETWORKING



- ❑ TAM provides basic infrastructure for streaming and events
- ❑ Extend TAM to support stateful/stateless MoD



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Call to Action

- SAI working group for MoD
- Targeted SAI Release ??

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