

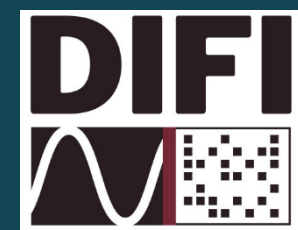


DIFI Standard What's new in 1.2(.0)

Simon Swift

DIFI Roadmap Working Group Chair
Engineering Director ETL Systems

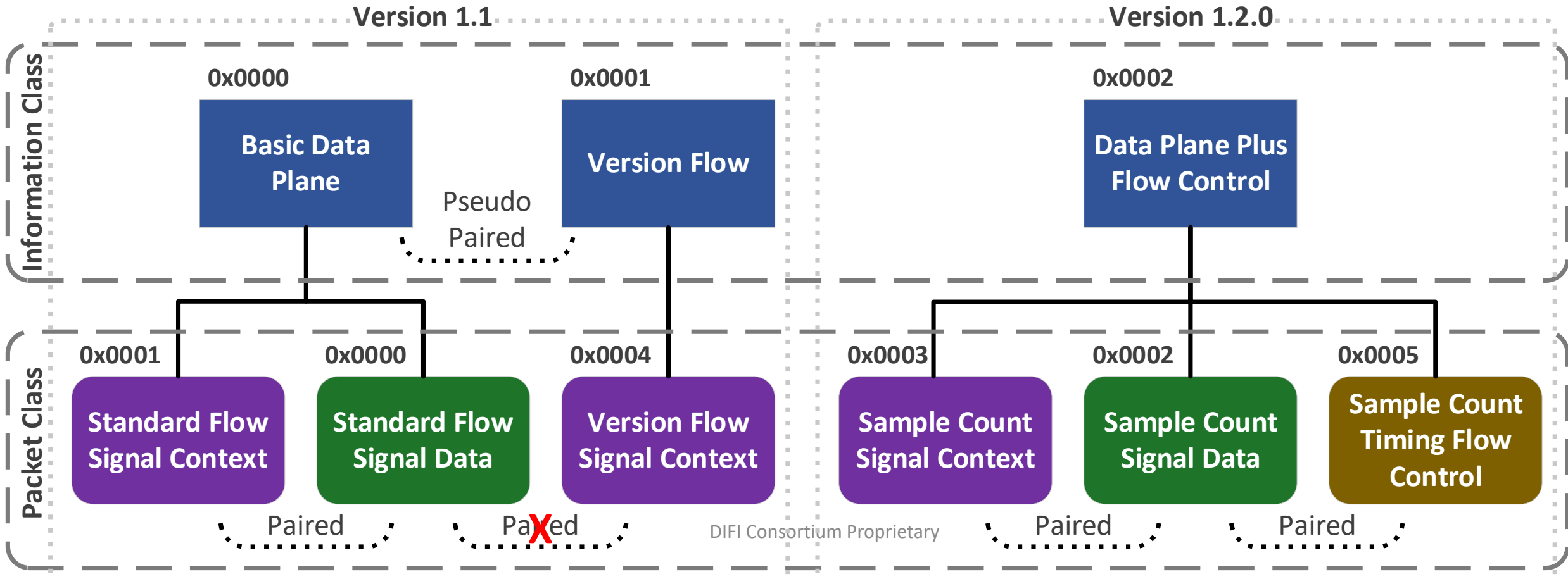
Oct 30th 2023



- Updated Information and Packet Classes
- Sampling Rates
- Stream ID and Reference Points
- Recommended Conventions
- Devices, Use Cases, and Implementations
- Looking forwards to 1.3.0

- In other presentations:
 - Reference Level, Scaling and Gain, including reference points
 - Synchronization

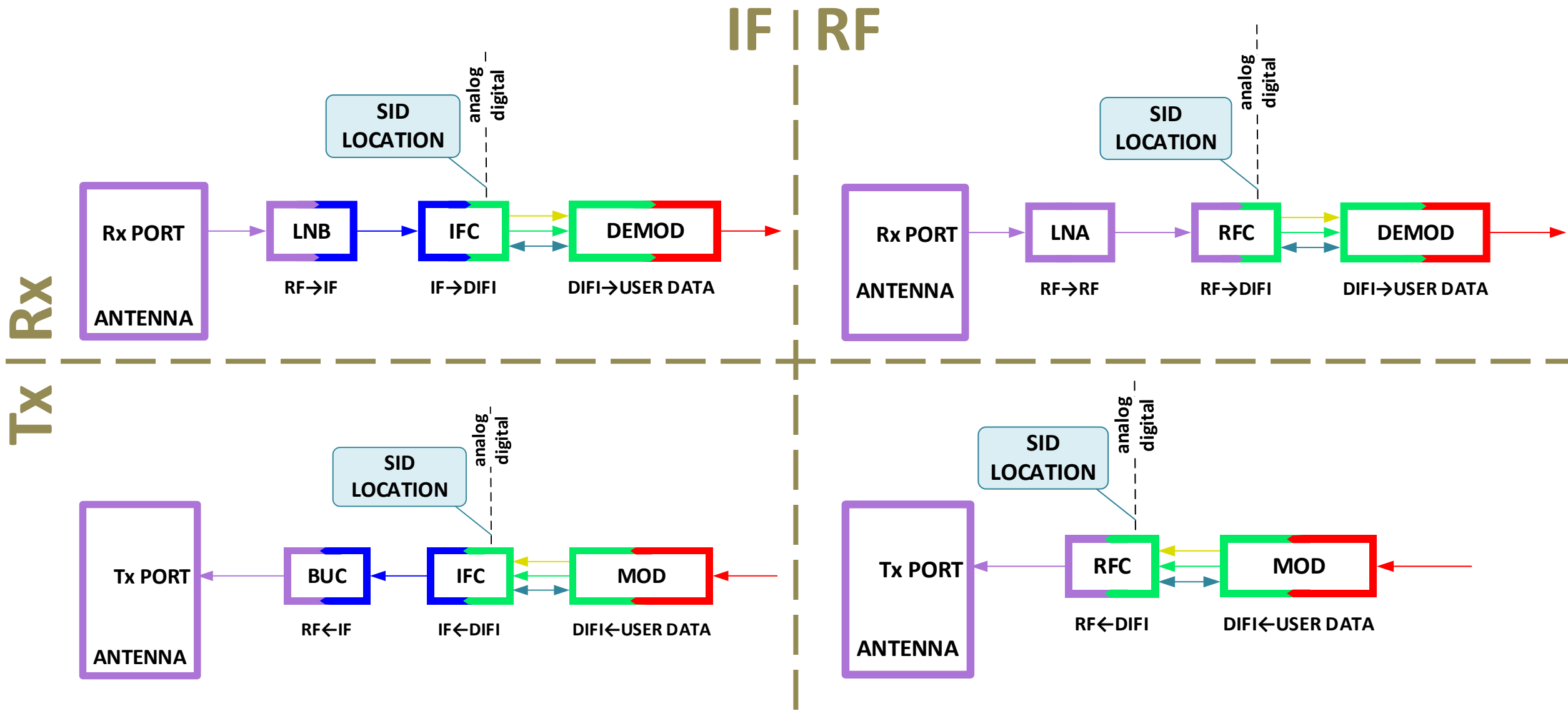
- Version 1.1 uses only Context Packets and Real Time (psec)
 - Timing provided by Version Flow Context Packets – cannot be SID paired with data
- Version 1.2.0 Introduces a new Information & Packet Class
 - Info' Class 2 uses Sample Count and Flow Control Packets paired to Data Stream ID

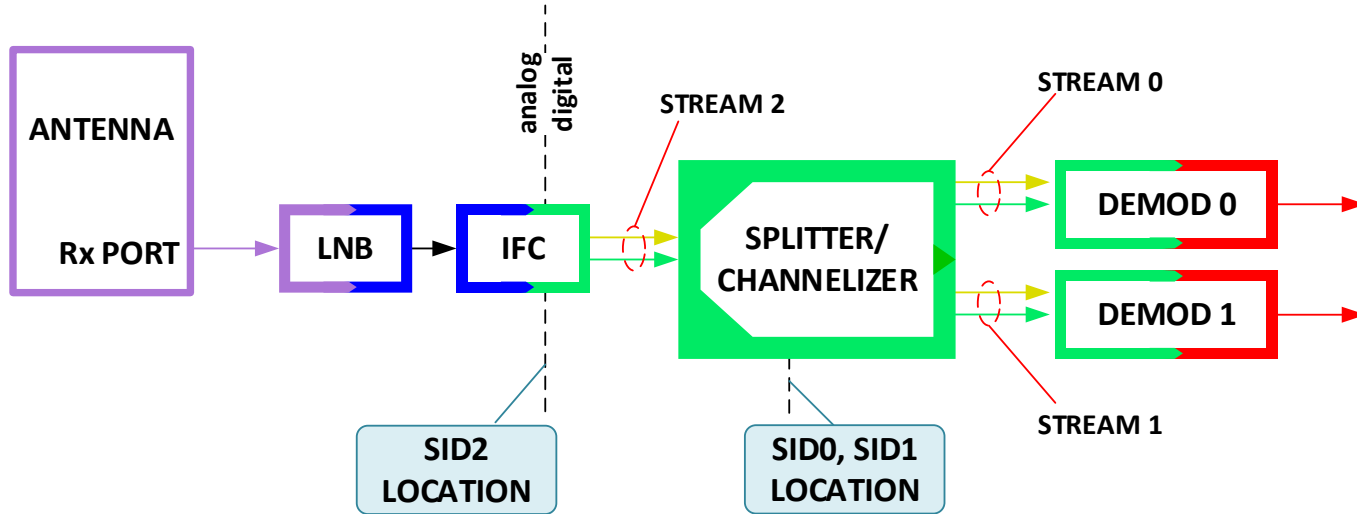


- Sampling rates become a very challenging issue...
- ...probably the biggest impediment to true interoperability
 - Using Multi-rate signal processing (resampling) consumes compute power
 - Which sample rates do we test against?
- Sample rates to be agreed on a “publish and declare” basis
- To be published on the DIFI website to allow interoperability
- But not a mandatory requirement, as some rates may be for “sensitive” applications

- This helps to accommodate low SWaP-C edge devices

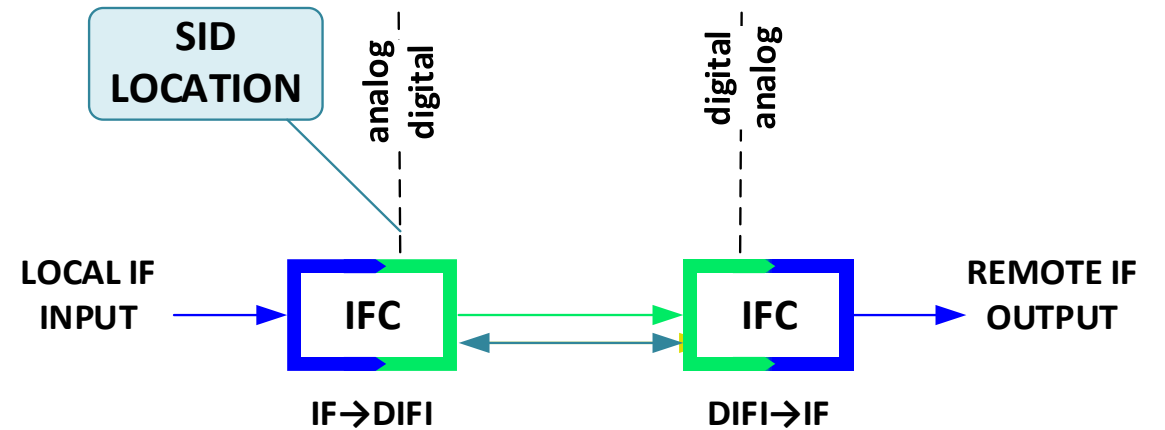
Stream ID and Reference Points





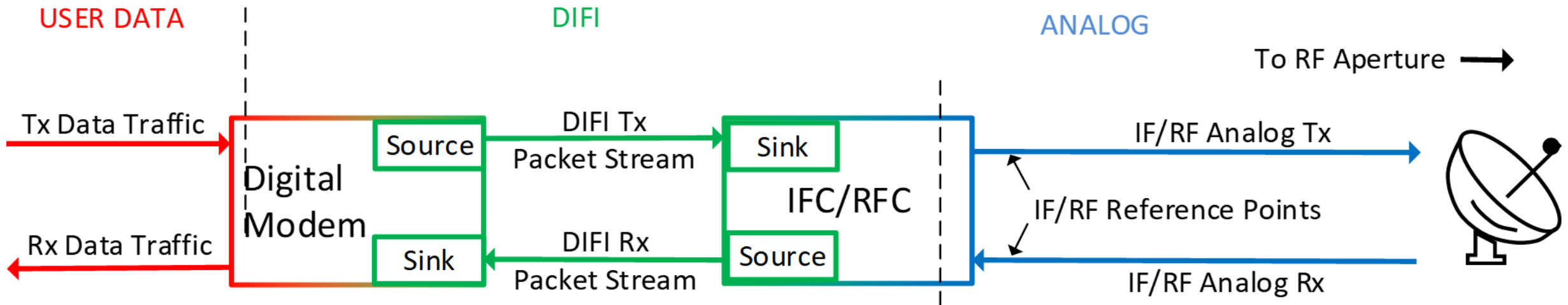
A new SID must be created when streams are split or combined

If a stream is passed on unaltered, it retains the existing SID

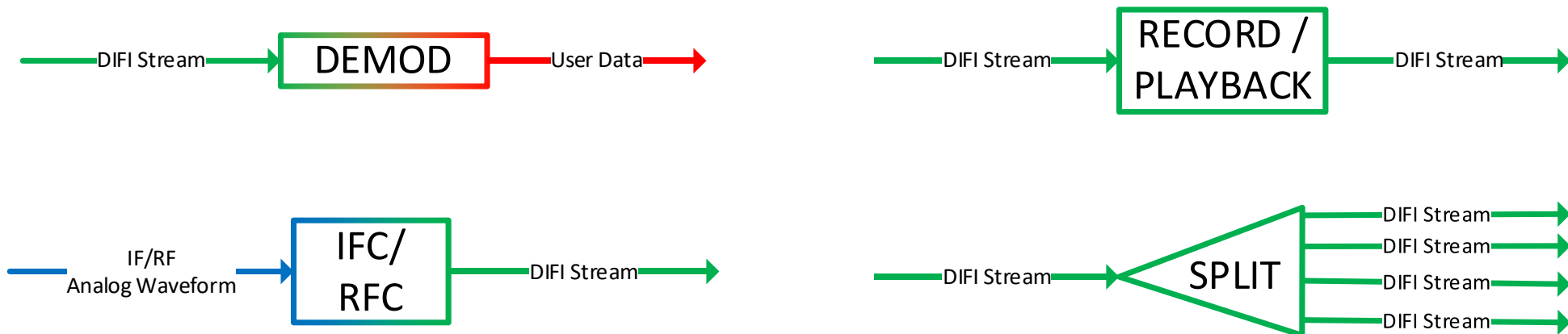


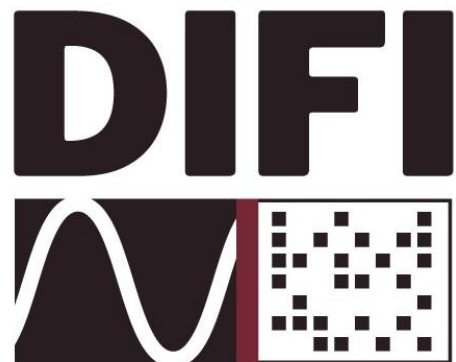
- A series of recommended conventions added
- Need to ensure everyone has common understanding and meaning

Detailed Duplex Equipment Diagram



- DIFI Device:
 - Any H/W, F/W, or S/W that creates a Source or Sink using the DIFI protocol.
 - Four DIFI device types currently defined
- DIFI Use Case:
 - Use of a DIFI device for generation, transmission, or consumption of a Packet Stream.
- DIFI Implementation:
 - Anything that implements one or more DIFI use cases.

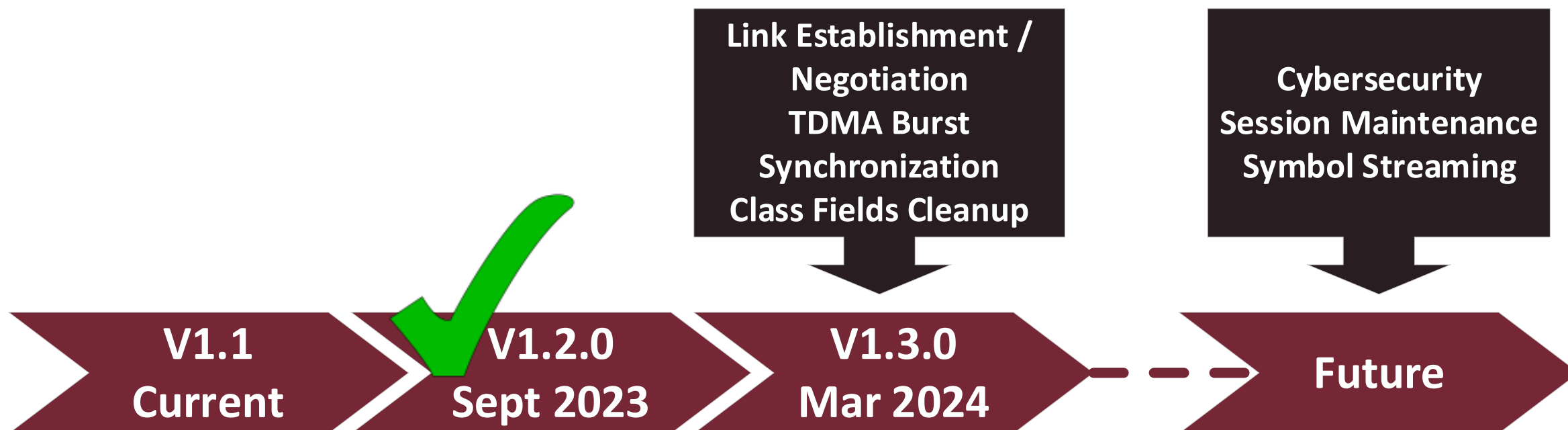




Release Roadmap



IEEE-ISTO Std 4900-2021: Digital IF Interoperability Standard





Thankyou...
...questions?

