

# VDIF

## VLBI Data Interchange Format

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# Scope

- VDIF is intended as a VLBI data interchange format usable for both real-time e-VLBI and non-real time data file formats
- Data are assumed to be uniformly time sampled.

# Requirements

- Data is self-identifying via time tag and data identification.
- Data may be discontinuous in time.
- Data may be single-channel or multi-channel.
- Data may be single bit or multi-bit.
- The number of channels should be flexible (not necessarily  $2^n$ ).
- Minimize conversion for different data transfer techniques.
- Suitable for data rates up to 100Gbit/s.

# Data Frames (1)

- Each frame has a 16-byte header followed by a data array of user-specified length.
- Data frame length for a single “stream” is constant for a particular scan.
- Data frame length should be a multiple of 8 bytes.
- Data frames per second must be an integer.
- Data frame cannot “cross” second boundary.

# Data Frames (2)

Two choices:

- Data array contains bits for a single channel
  - Multiple channels in different “streams”
  - Preferred for new equipment/apps.
- Data array contains bits for multiple channels
  - Multiple channels in a single “stream”
  - Avoid corner turning for legacy equipment

# Data Frames (3)

- Layout still under discussion:
- Time (seconds since 00UT 1 Jan 1990)
- Stream ID
- Invalid marker
- Frame # within second
- # channels
- Bits/sample
- Frame length
- Station ID (two letter code)