oneAPI HW SIG (June 22nd 2023)

L0 Timestamps Units Uniformity

Matias Cabral

Problem: Ambiguity in L0 spec led to non-uniform units

- Undocumented Status quo:
  - GPU implementation
    - Global Timestamps: host in ns and device in tick count
    - Kernel Timestamps: in tick count
    - Metrics Timestamps: ns
    - Event Timestamps: under development
    - Timer resolution:
      - Device: new APIs in frequency, option for legacy in ns
      - Metrics: frequency
  - VPU Implementation
    - All timestamps are tick count and resolution in frequency

Proposal: Explicit definition of units

- L0 Spec explicit definition of units #119
- L0 implementations update on a defined version
  - Plan communicated in advance and release noted
- Users update accordingly

- Users feedback : MPI, VTune, PTI, OMP
  - Unanimous agreement to uniformly return **timestamps in ns** and **resolutions in frequency**

Thank you!