

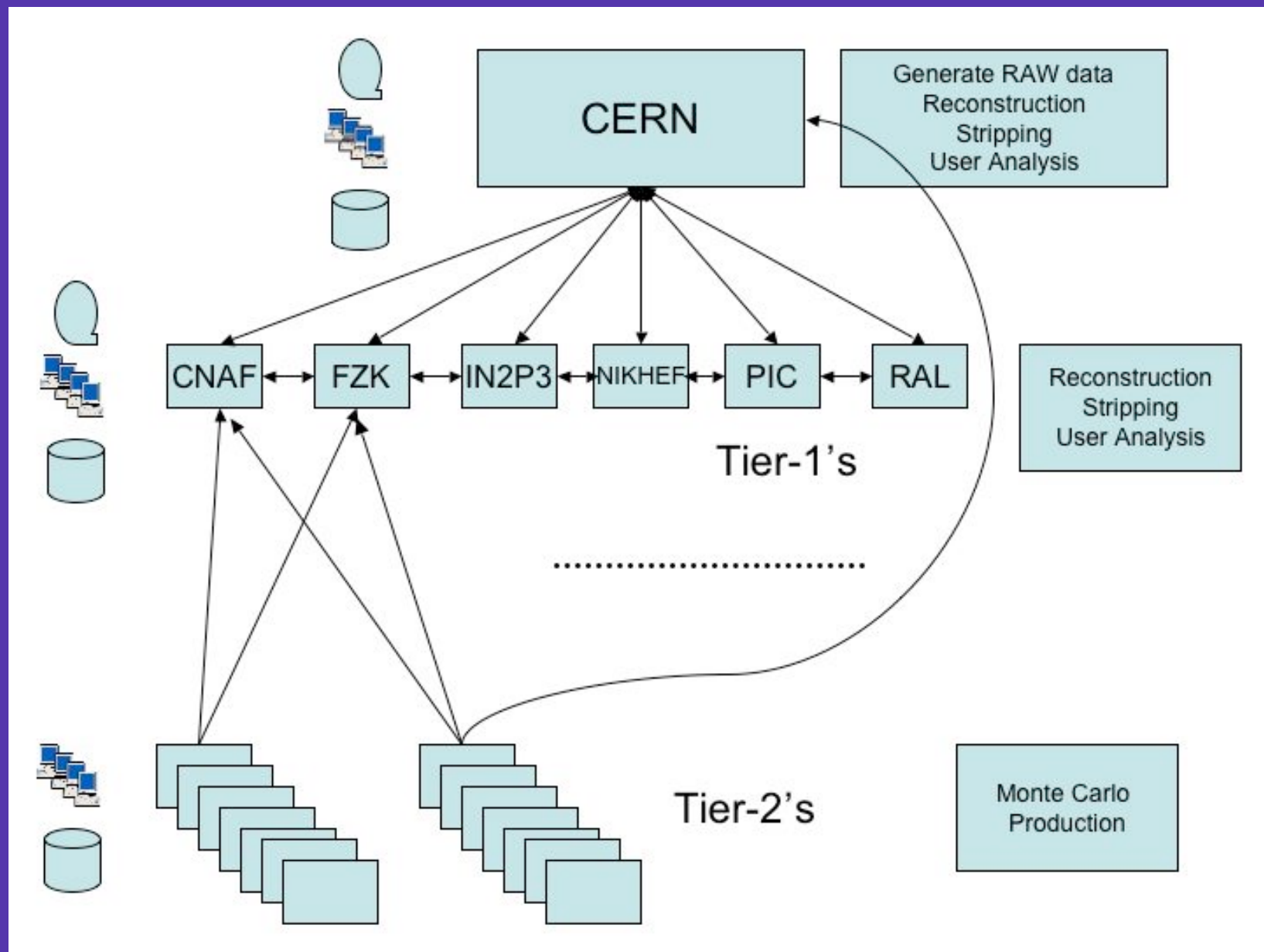
LHCb Tier Relationships

Nick Brook



- Computing Model
- Data taking
- Re-processing
- Stripping (some T1 \leftrightarrow T2)
- Monte Carlo production (T1 \leftrightarrow T2)

Computing Model



Data taking

Pit to Tier-0

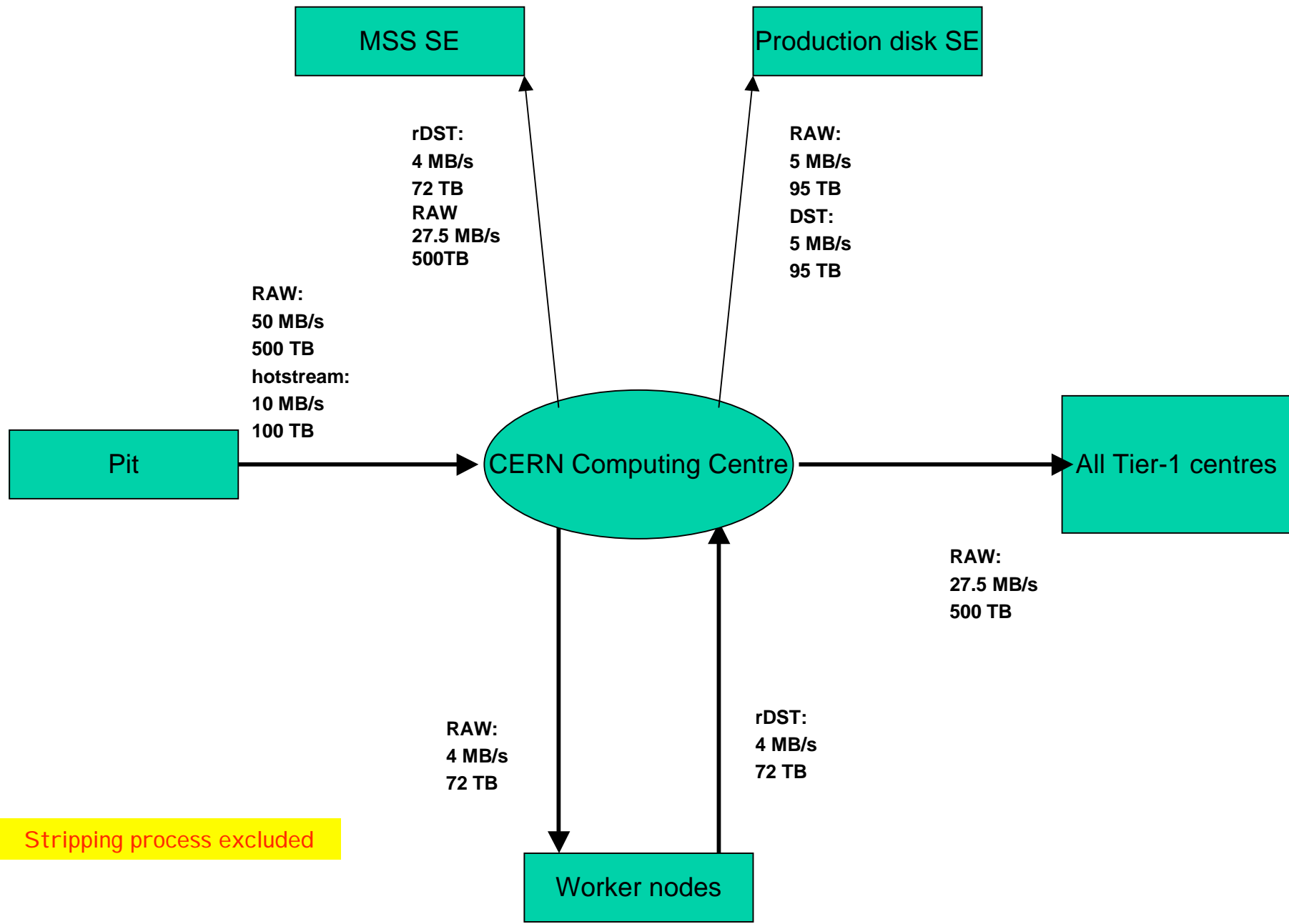
Trigger rate: 2000 Hz

Assumption on event size: 25 kB

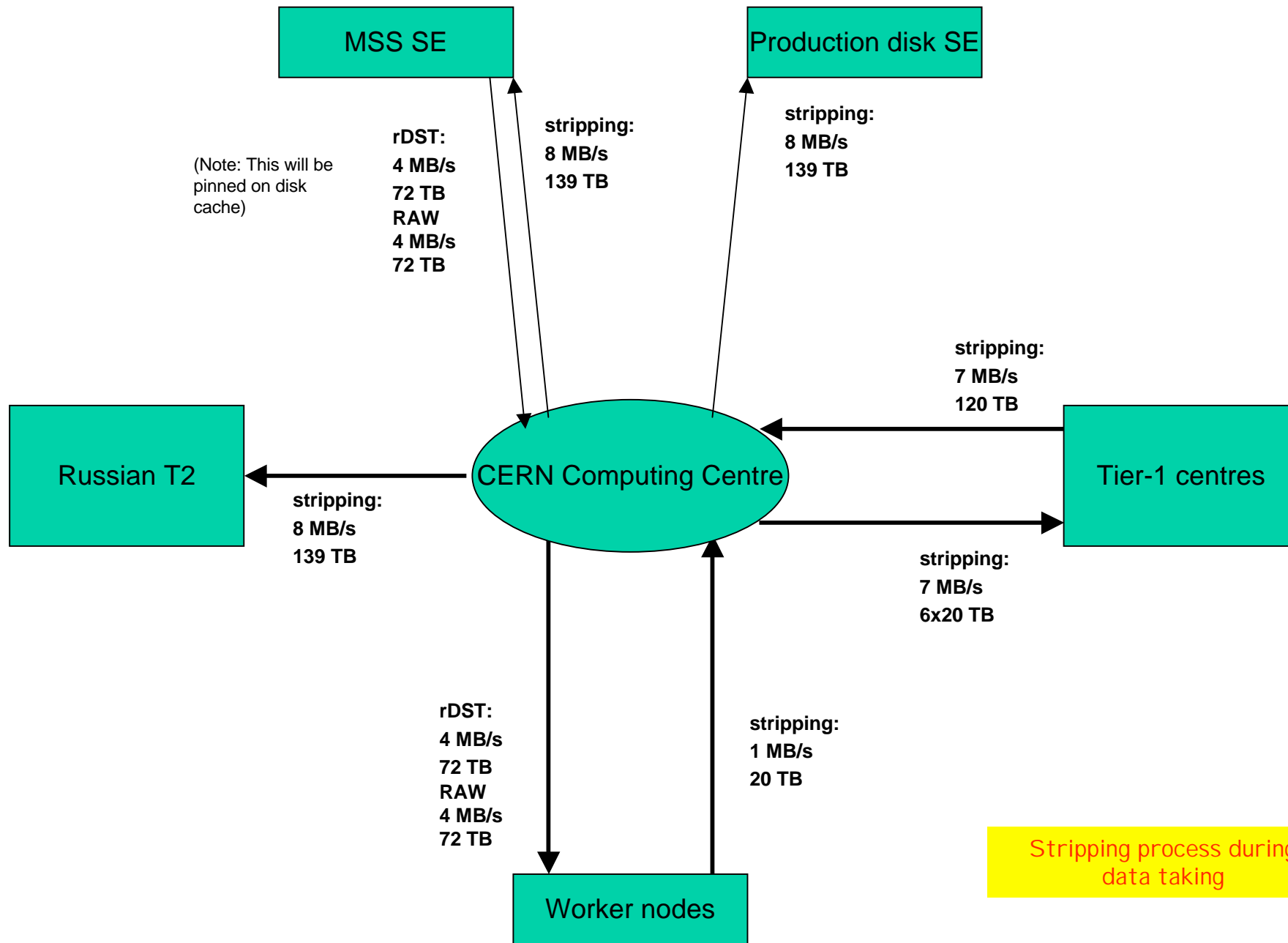
Quasi-real time rate ~60 MB/s

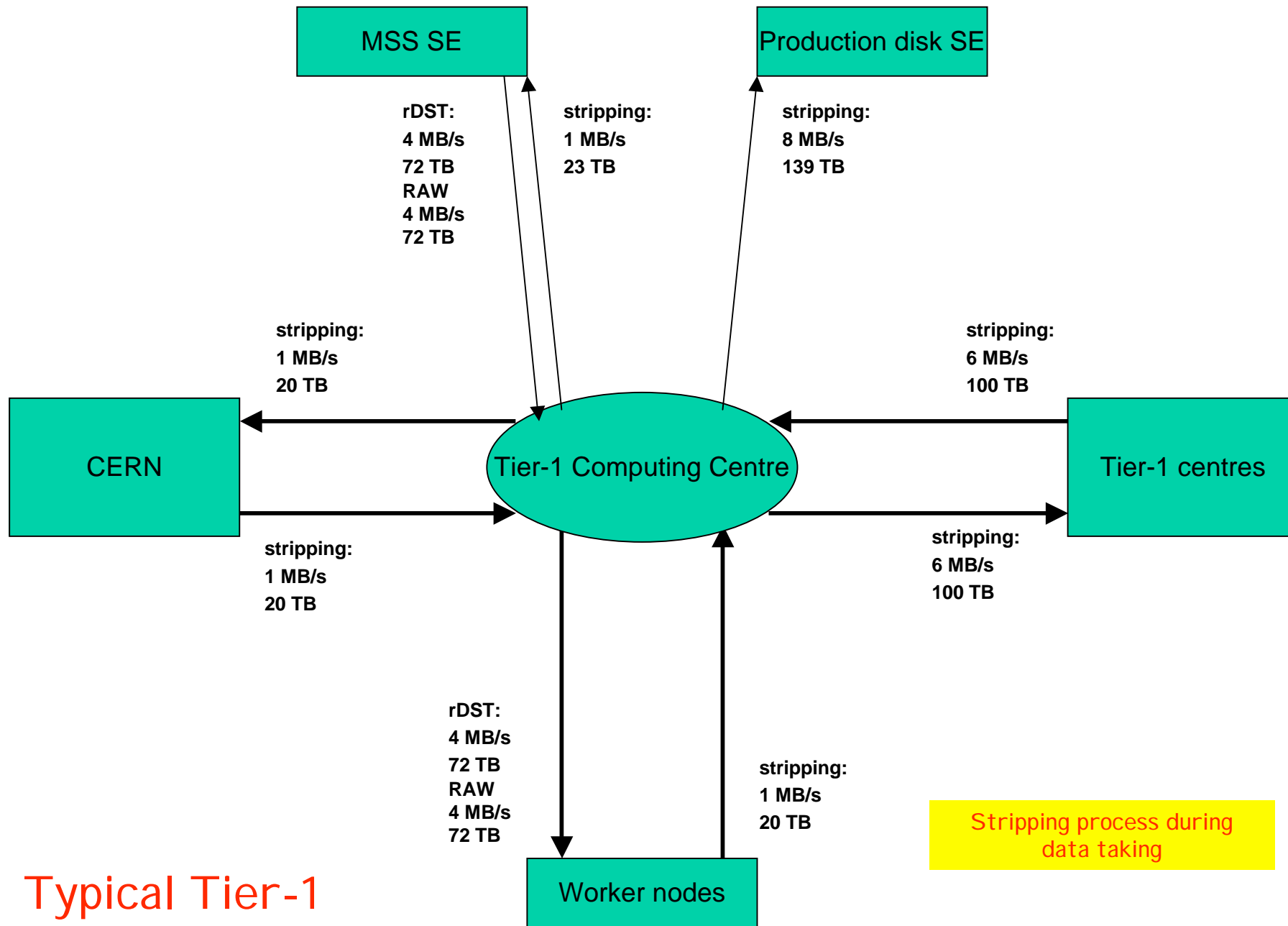
40 TB buffer at pit

Buffer at T0 assumed in TDR: store ~1 (??) days data before finally migrated to tape, ~0.5-1.0 TB



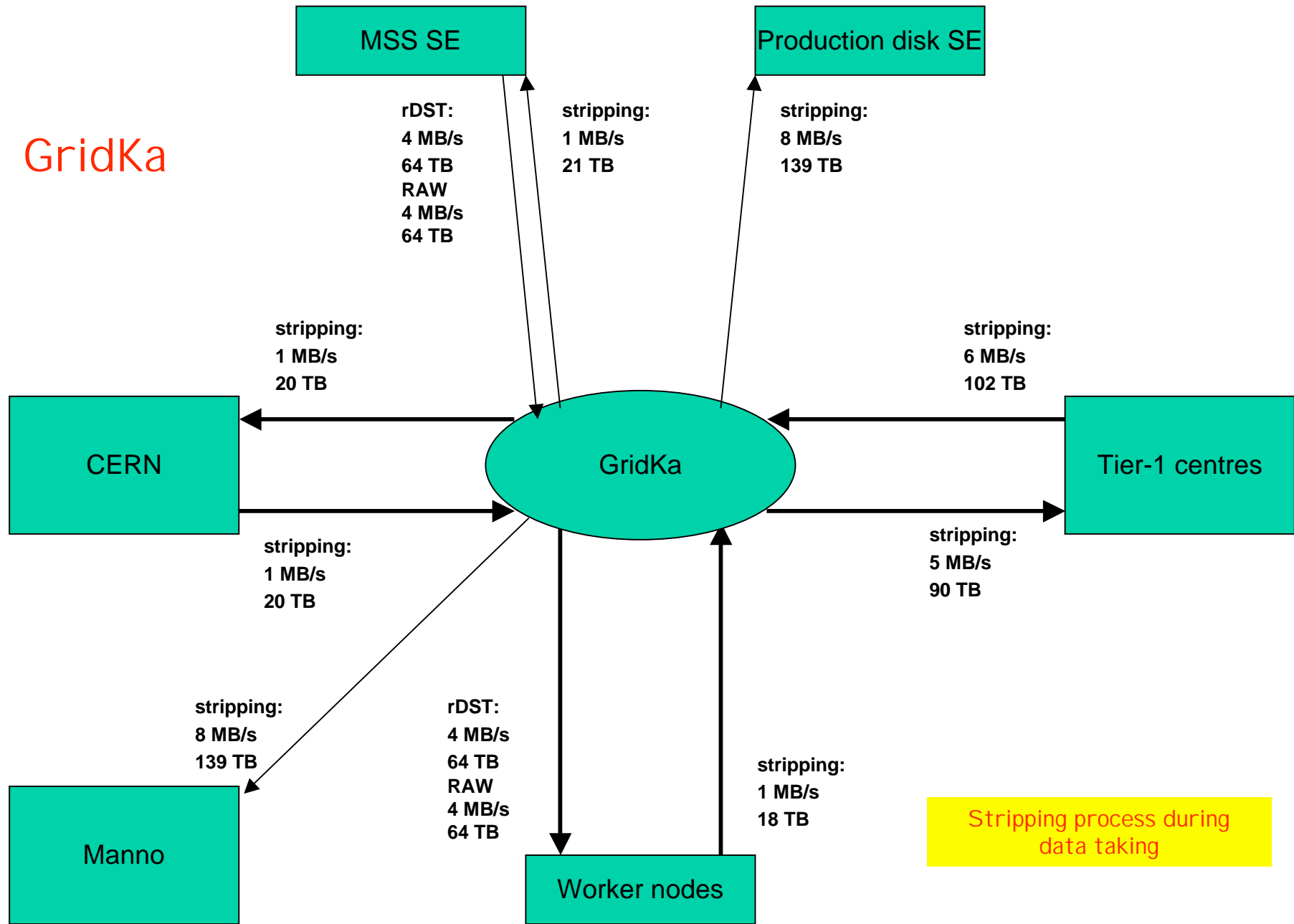
Stripping process excluded





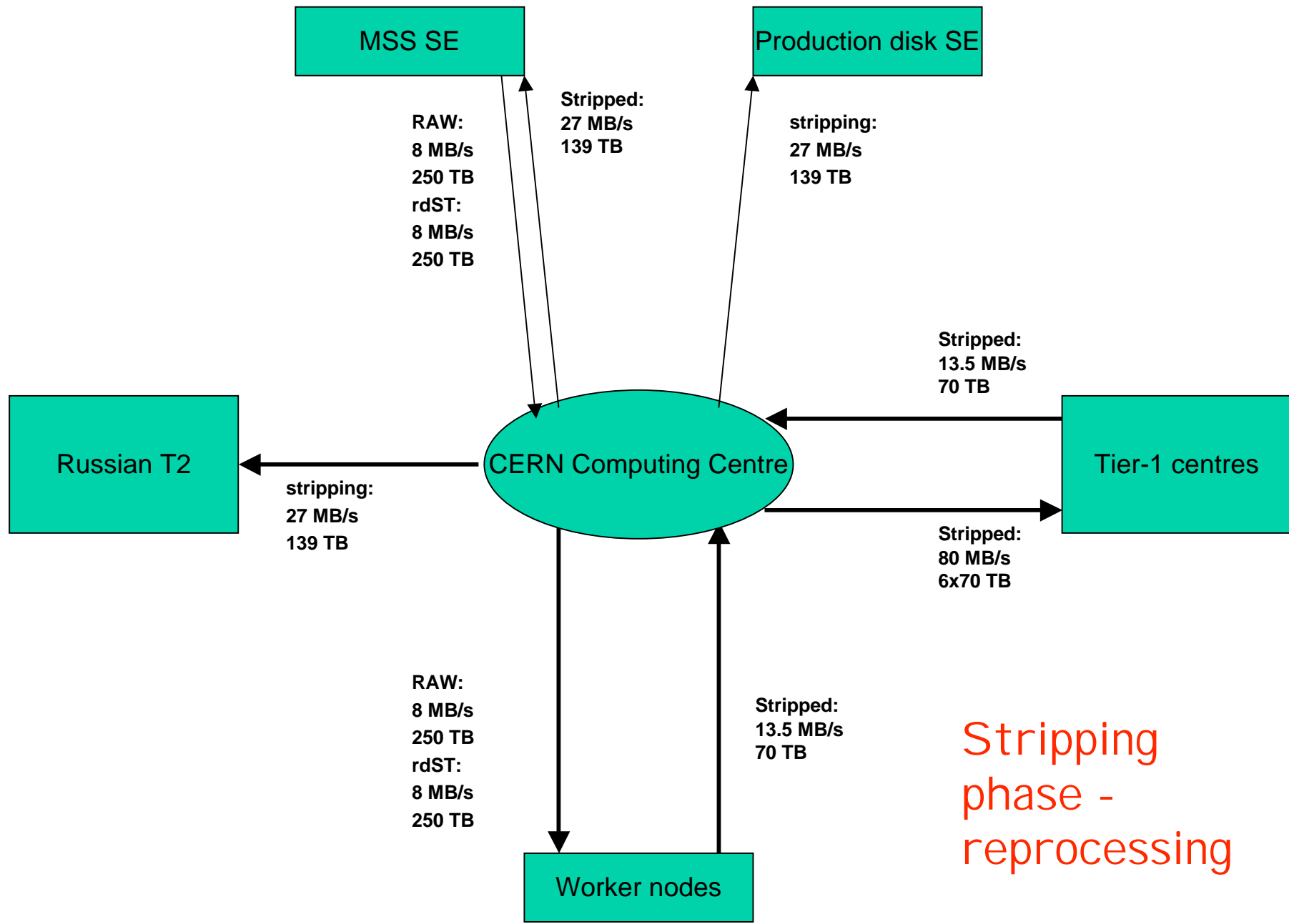
Typical Tier-1

GridKa

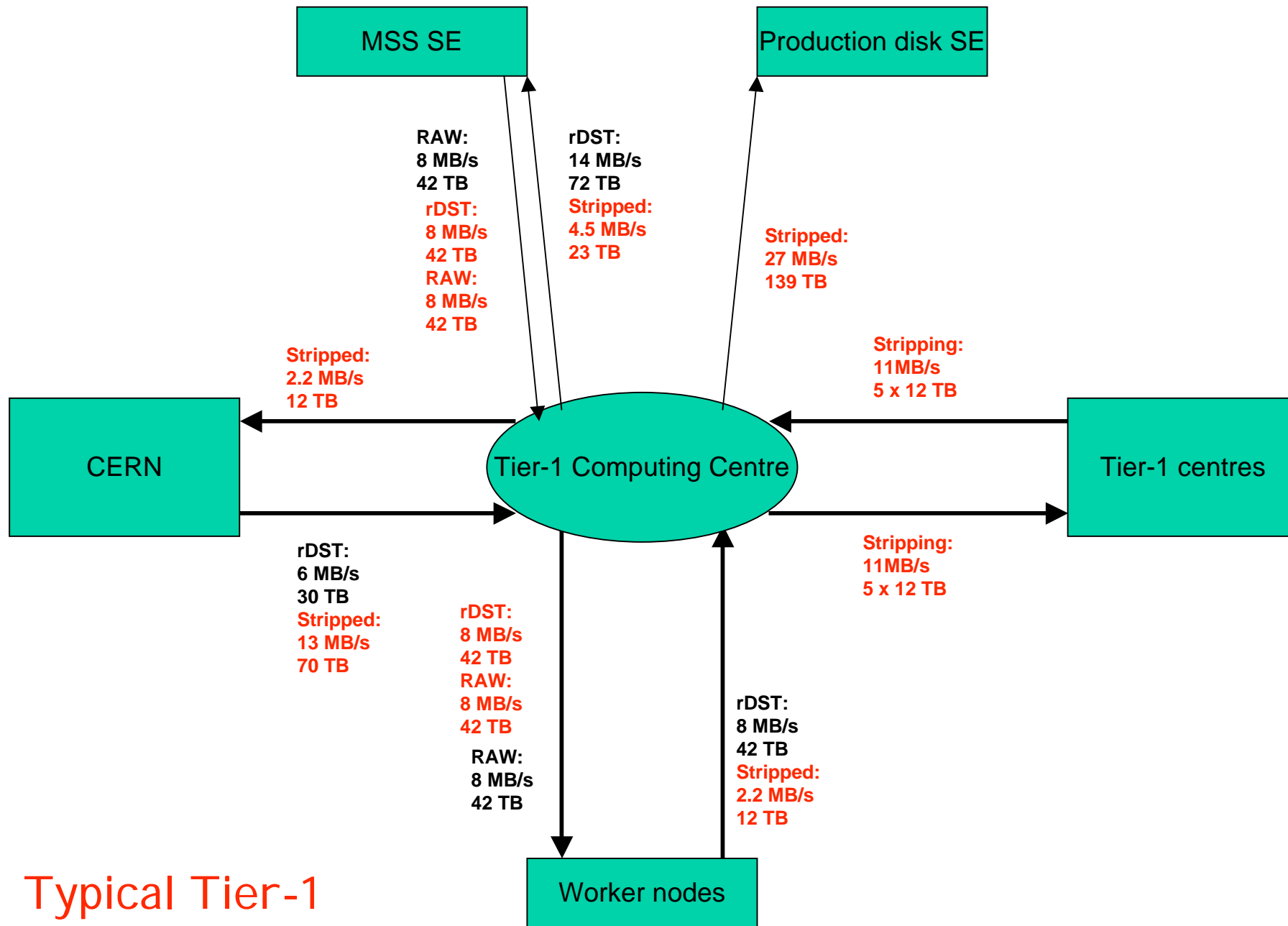


Stripping process during data taking

Re-processing

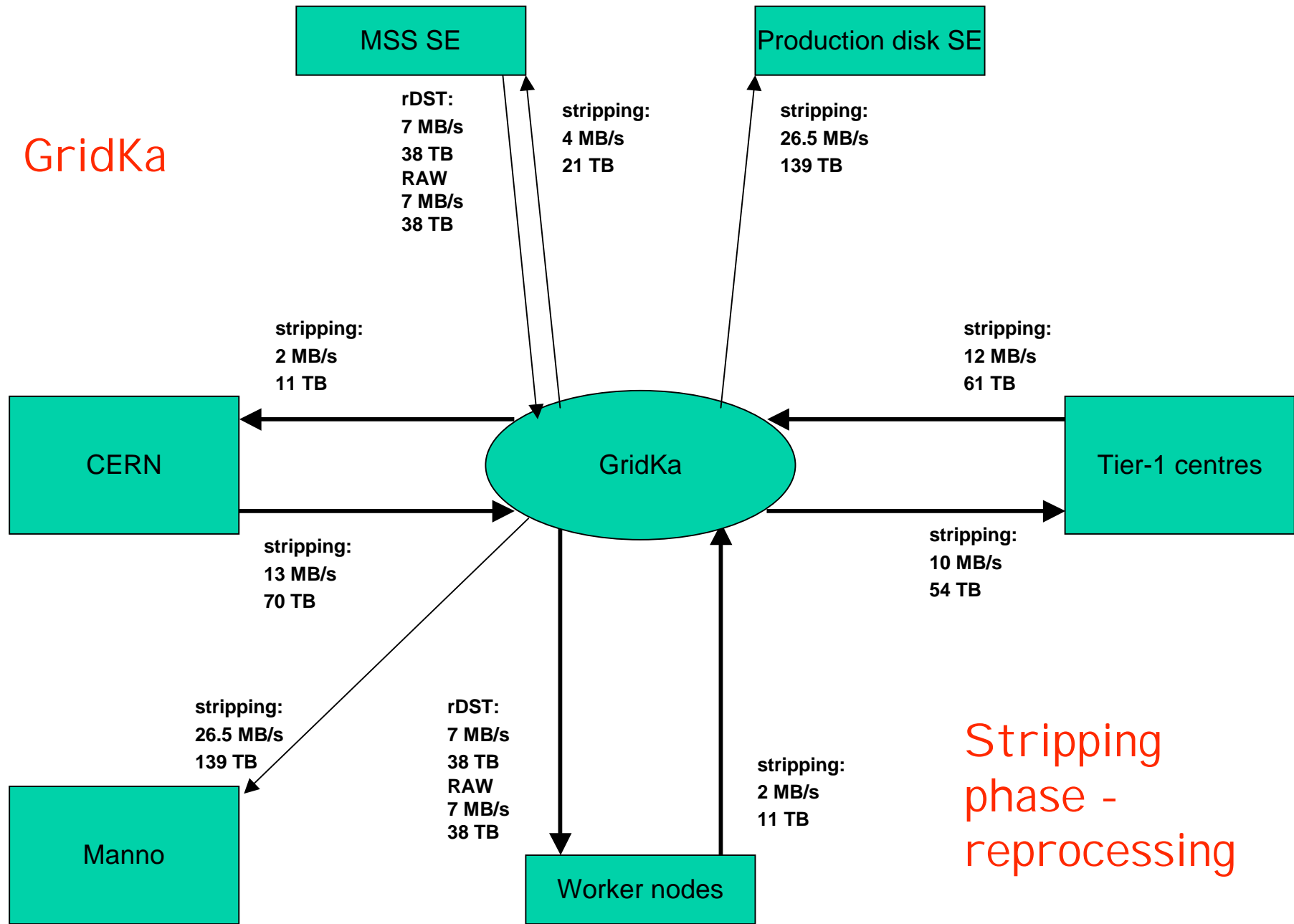


Stripping
phase -
reprocessing



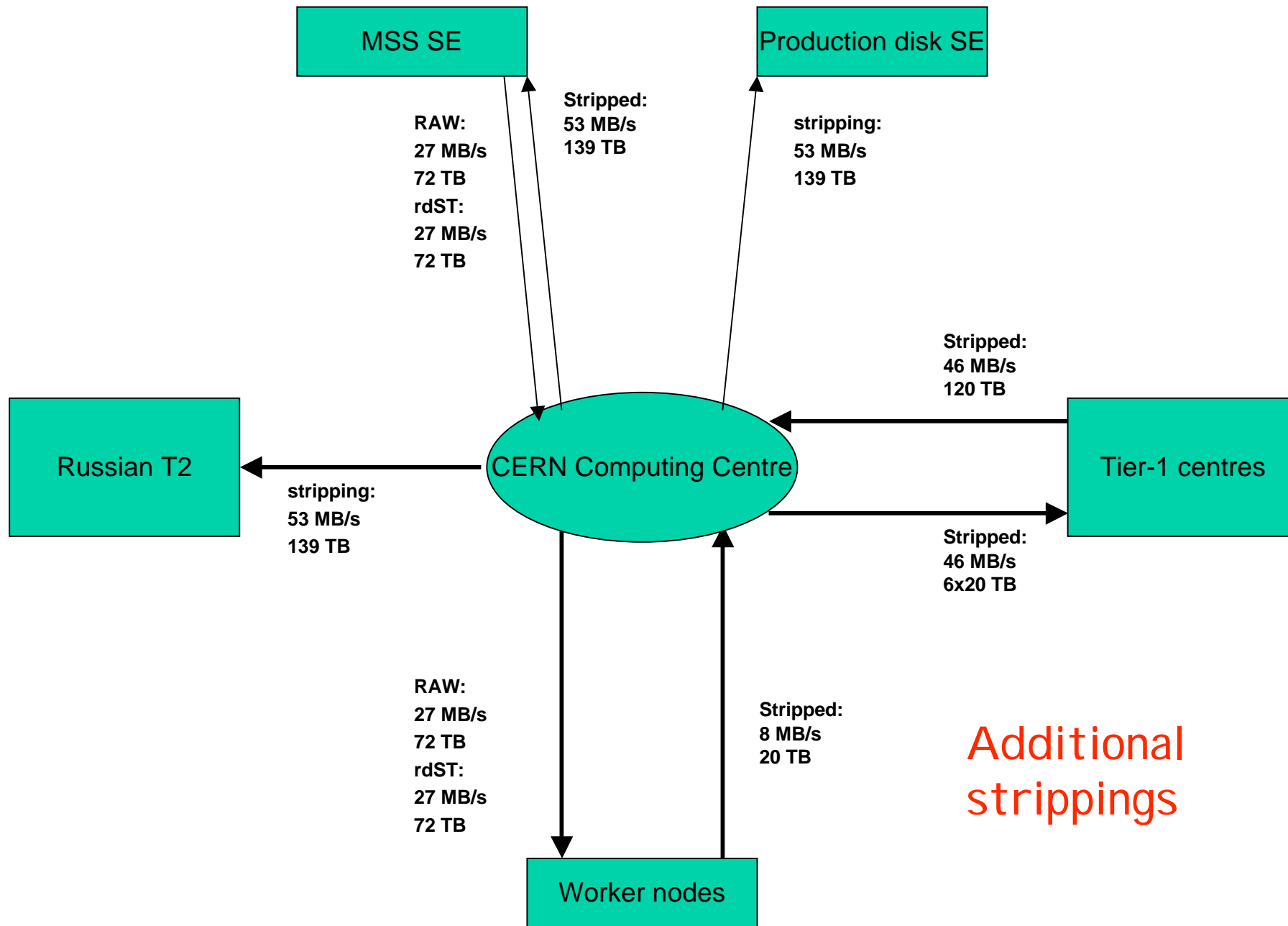
Typical Tier-1

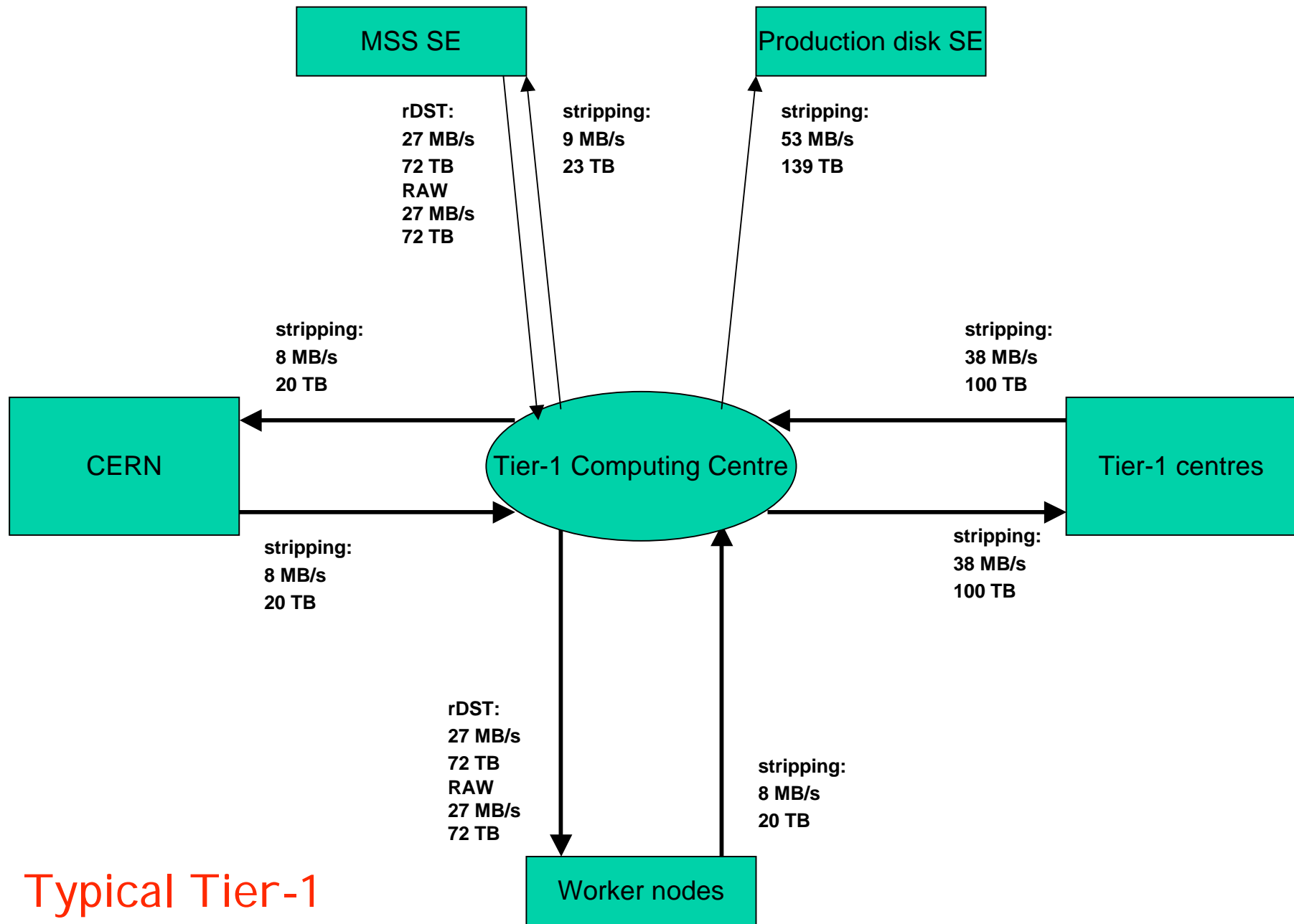
GridKa



Stripping
phase -
reprocessing

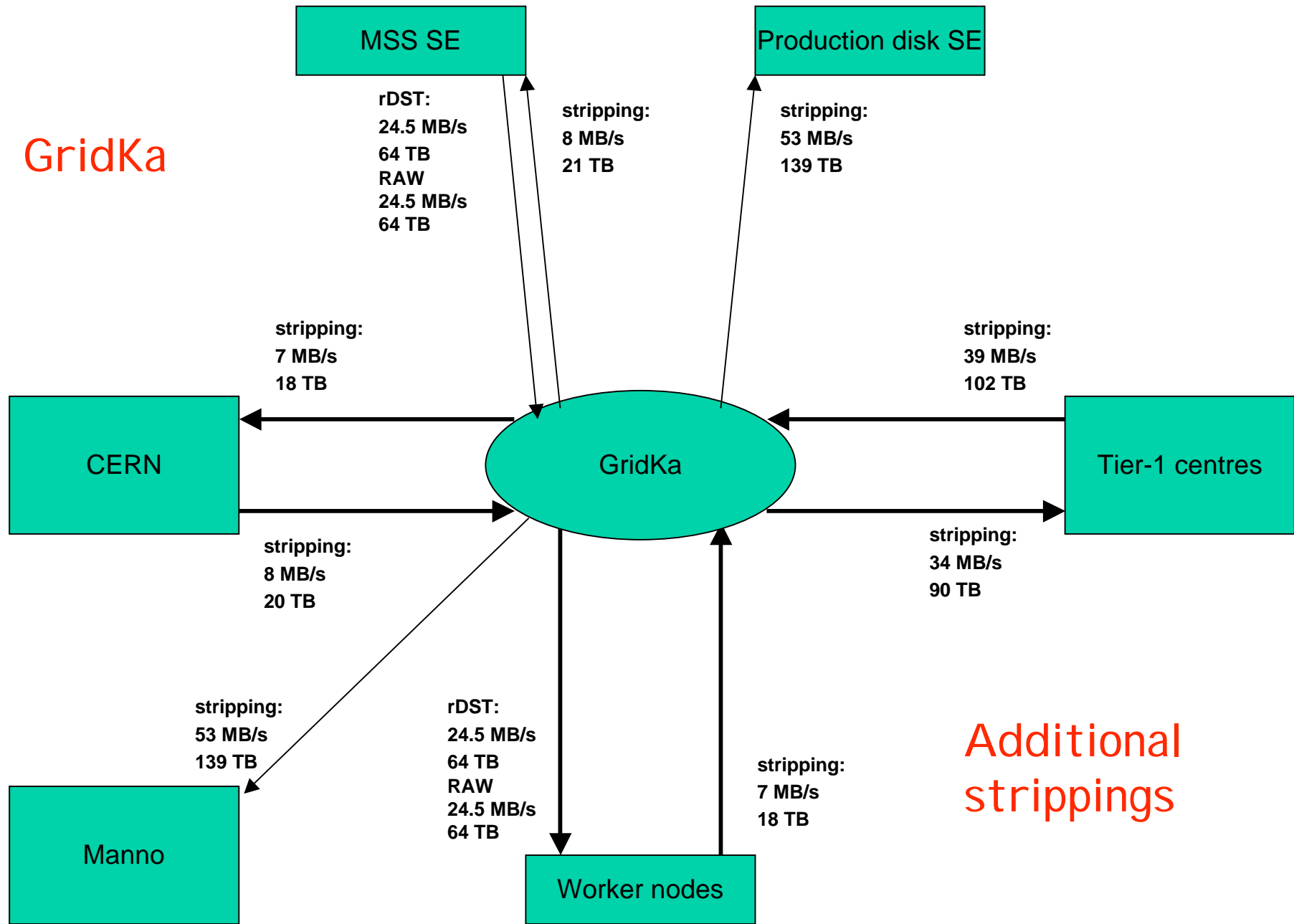
Additional Strippings





Typical Tier-1

GridKa



Additional
strippings

Monte Carlo Production

Transfer rates are typically low

Full copy at CERN & 3 copies across 6 Tier-1's

- 1 copy of MC data 160 TB/annum

T2 mapped to CERN & T1 then data re-distributed to other T1 sites

- CNAF: it
- RAL: uk
- PIC: es
- Karlsruhe: de, pl, ch (excluding CERN)
- CERN: ru
- Lyon: fr, br + west of meridian line
- NIKHEF: nl + east of meridian line