ANTARES software and SeaTray

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"online" software

"online" software
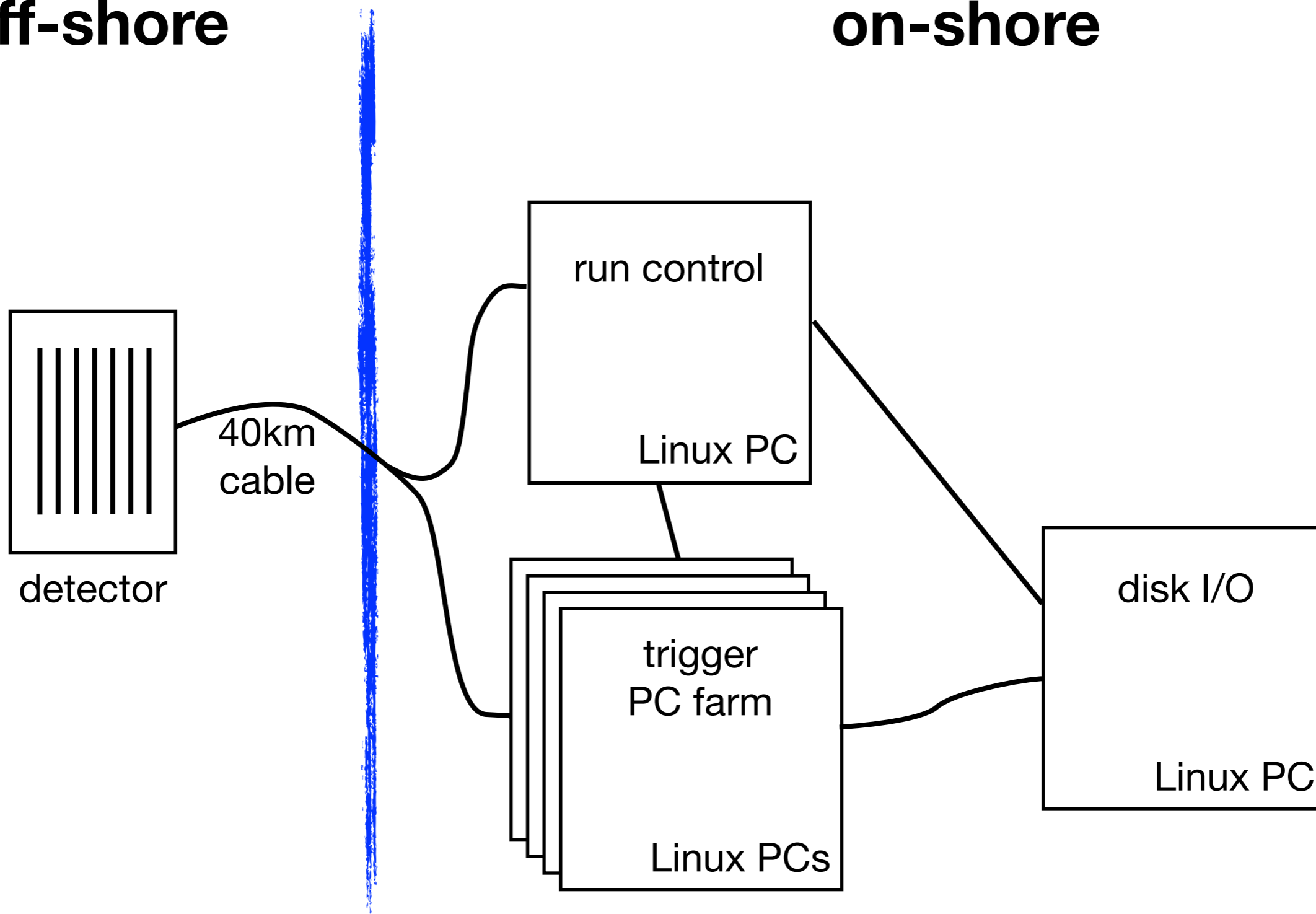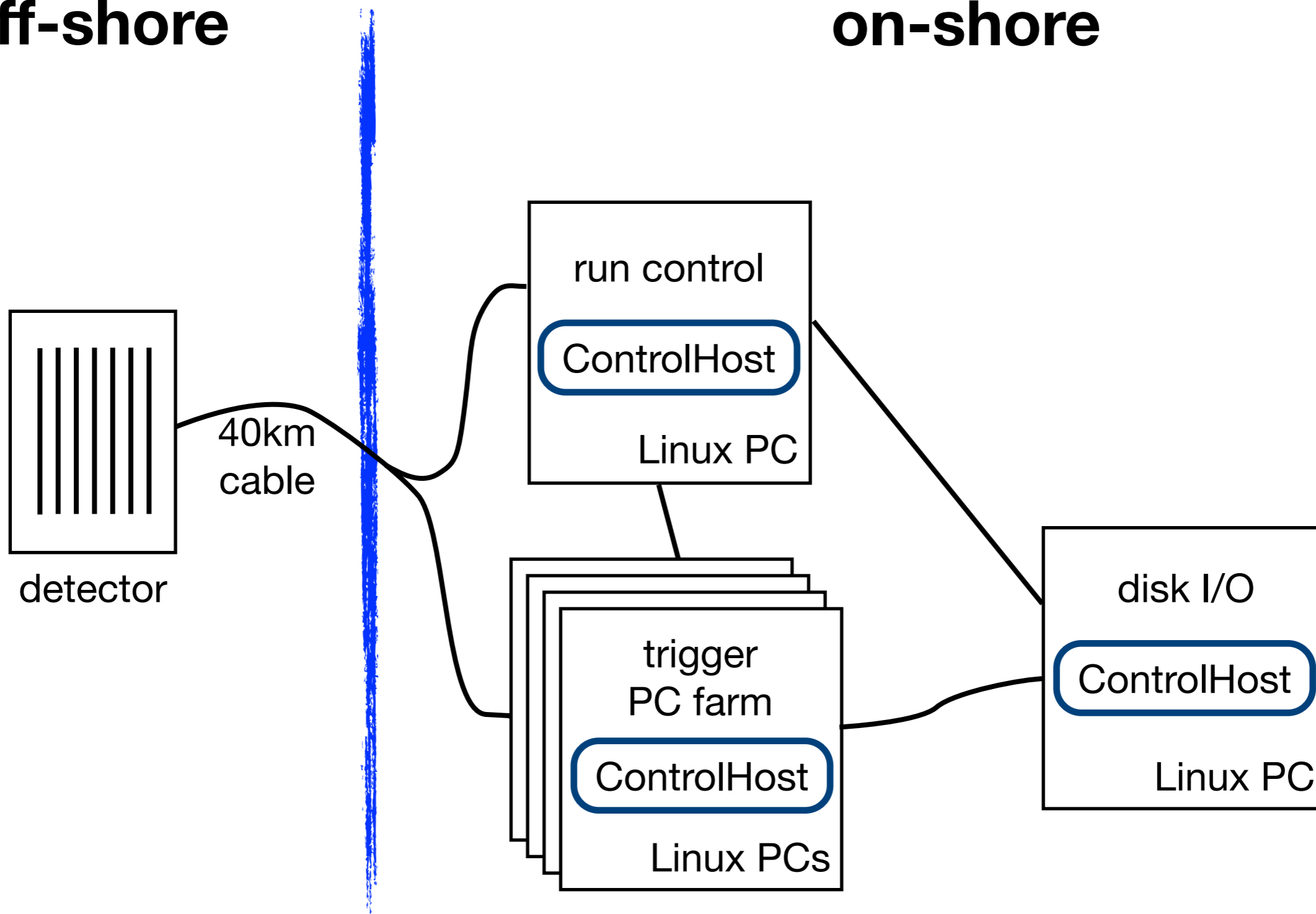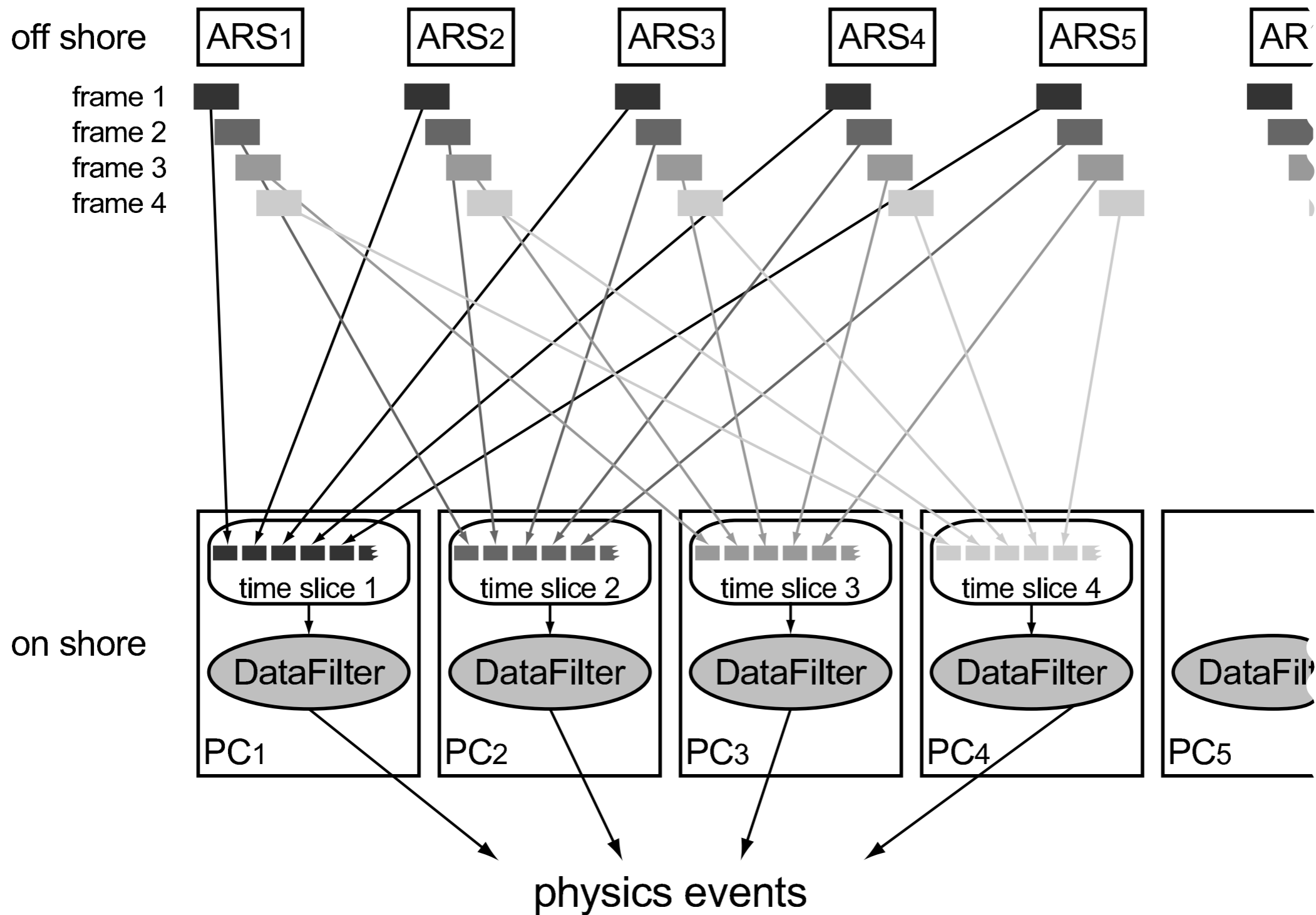
Antares
DAQ

Antares DAQ (simplified)

off-shore　　　　　　　　**on-shore**

detector

40km cable

run control

Linux PC

trigger PC farm

Linux PCs

disk I/O

Linux PC

Antares DAQ (simplified)

off-shore

on-shore

detector

40km
cable

run control

ControlHost

Linux PC

trigger
PC farm

ControlHost

Linux PCs

disk I/O

ControlHost

Linux PC

Antares DAQ (simplified)

Antares DAQ data format

ROOT files

hardware-centric data format
(TVC/AVC values, integer timestamps, ...)

no geometry/calibration information!

-> only usable with database access

"offline" software

"offline" software

old

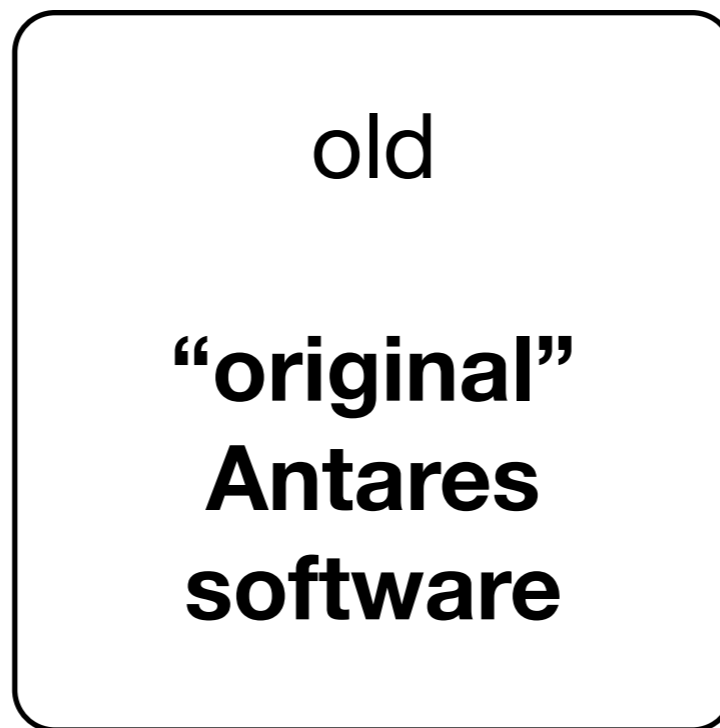**"original" Antares software**

"offline" software

old

**"original"
Antares
software**

new

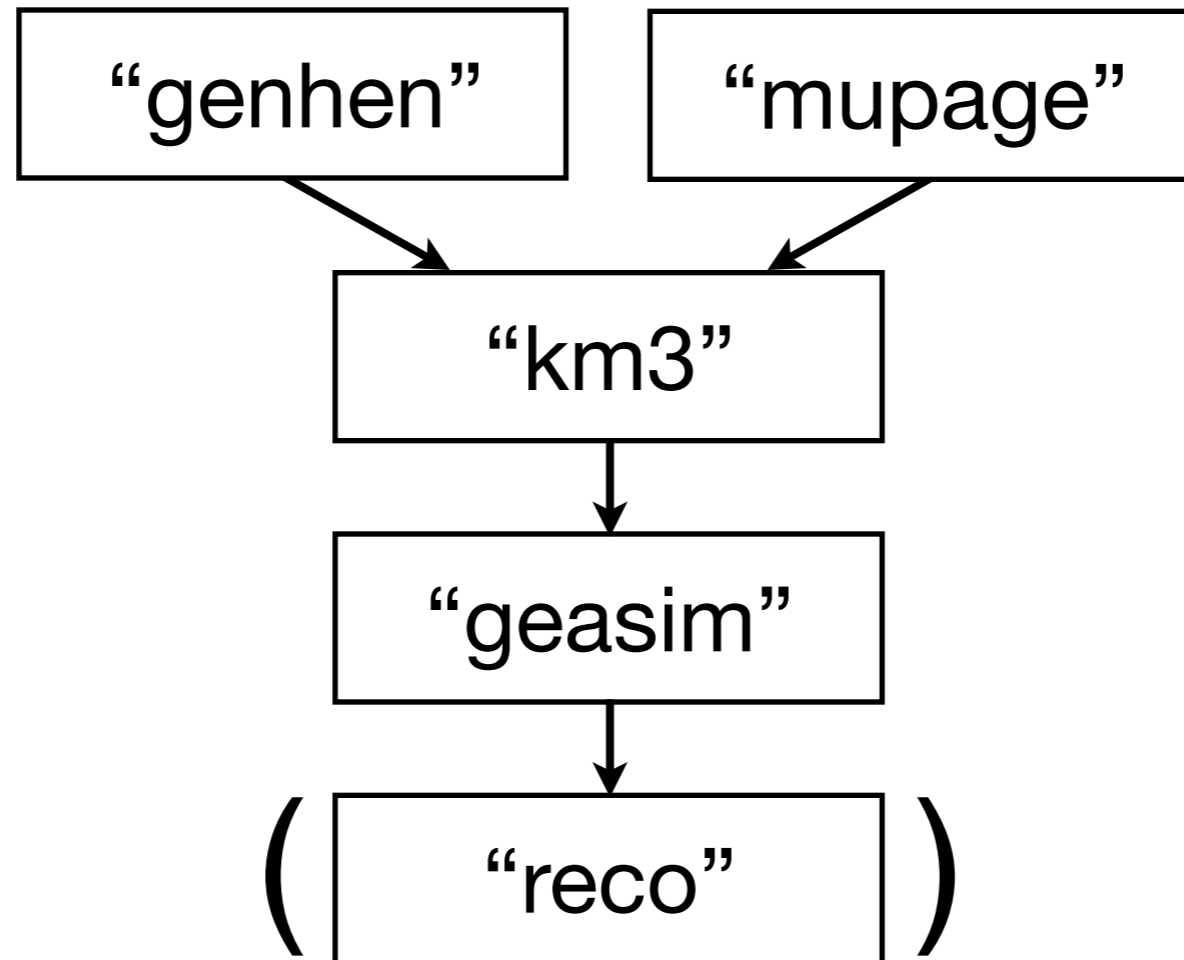**"SeaTray"**

"offline" software
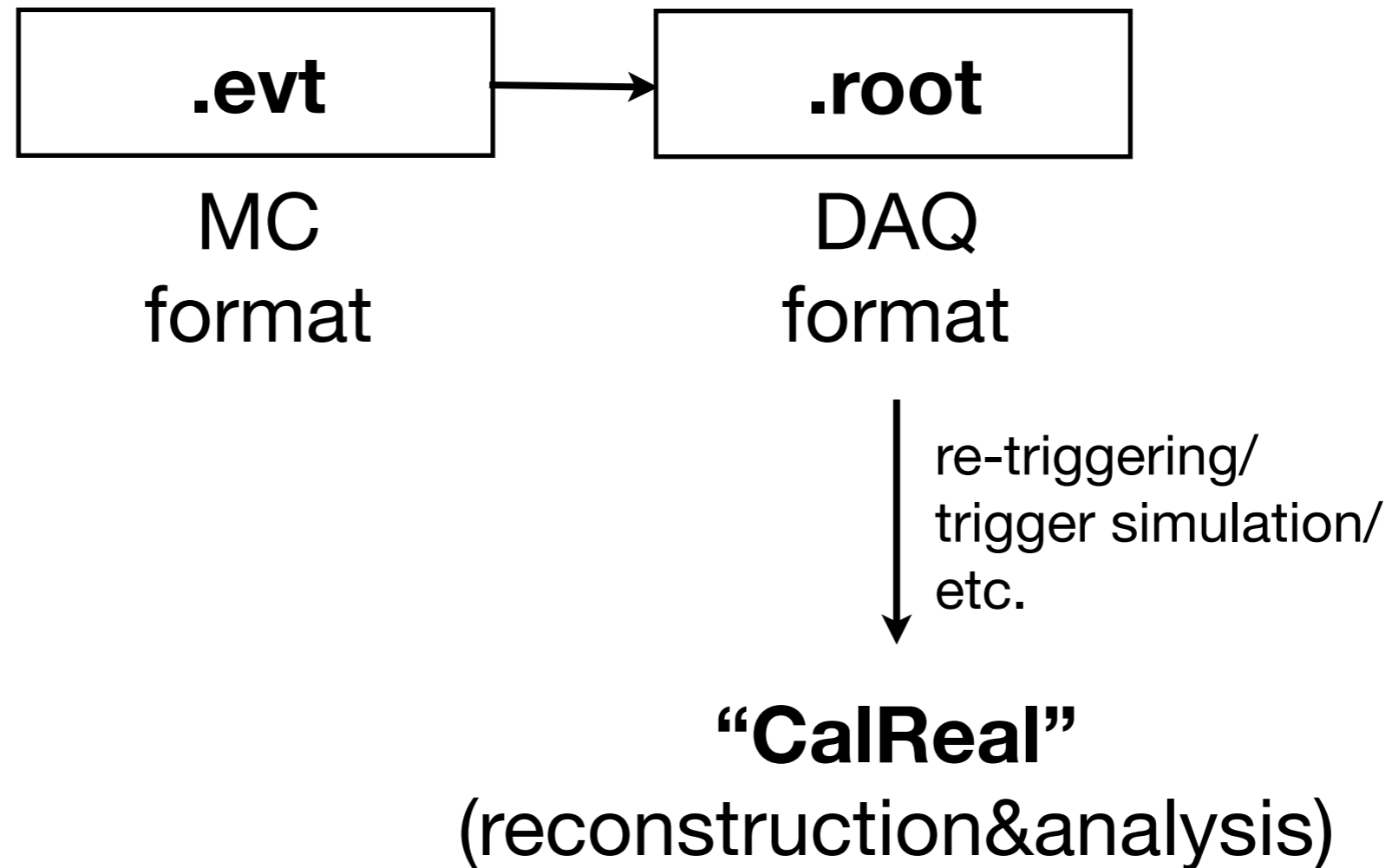
old

**"original"
Antares
software**

legacy data format (".evt")

```
start_event: 108 1
track_primary: 0 0.00 0.00 20268.04 0.338565 0.129254 -0.932023 0.79446E+04 0.00 14
weights: 0.27032872E+06 0.15213714E+19 0.48311763E+12
track_seamuon: 1 0.25 0.50 0.00 0.338531 0.129255 -0.932035 1164.360 76270.46 6
track_in: 1 -139.617 -74.827 313.971 0.339682 0.132405 -0.931174 0.157673E+03 -0.116604E+04 5 622.771
total_hits: 12
hit:       1    185      1.13       19.91         -5       1       1     19.17
hit:       2    187      1.20        8.78         -5       1       1      9.77
hit:       3    188      1.04        1.67         -5       1       1      3.48
hit:       4    189      1.46        6.27         -5       1       1      6.13
hit:       5    191      1.02       53.98         -5       1       1     54.00
hit:       6    194      1.27       84.39         -5       1       1     85.93
hit:       7    273      0.88      617.84         -5       1       1    615.61
hit:       8    281      1.02      433.48         -5       1       1    433.77
hit:       9    285      0.70      704.35         -5       1       1    703.24
hit:      10    149      0.84      686.73         -5       1       1    688.96
hit:      11    341      1.18      194.62          3       1       1    193.85
hit:      12    297      0.70      710.80         -3       1       1    711.23
end_event:
```

old ANTARES tools
(read/write .evt text files)

DAQ simulation and data analysis

"offline" software

old

"original" Antares software

new

"SeaTray"

"offline" software

new

"SeaTray"

IceTray for ANTARES: "SeaTray"

IceTray ⟶ KM3NeT

↓

IceTray for ANTARES: "SeaTray"

IceTray ⟶ Antares

↓

IceTray for ANTARES: "SeaTray"

IceTray ⟶ Antares ⟶ KM3NeT

↓

IceTray for ANTARES: "SeaTray"

IceTray $\longrightarrow$ Antares $\longrightarrow$ KM3NeT

"KM3Tray"

$\downarrow$

IceTray for ANTARES: "SeaTray"

IceTray $\longrightarrow$ Antares $\longrightarrow$ KM3NeT

~~**"KM3Tray"**~~

$\downarrow$

IceTray for ANTARES: "SeaTray"

IceTray $\longrightarrow$ Antares $\longrightarrow$ KM3NeT

~~"KM3Tray"~~

"SeaTray"

$\downarrow$

IceTray for ANTARES: "SeaTray"

IceTray ⟶ Antares ⟶ KM3NeT

~~**"KM3Tray"**~~

"SeaTray"

official software framework
for ANTARES & KM3NeT

Antares modules in "SeaTray"

event input: .evt, .root, realtime (via ControlHost)

geometry input: MC, database, trigger/"nominal"

readout simulation: calibration, noise, OM response, full trigger

hit-filtering template module

reconstruction: std. Antares reco. modularized, other algorithms

event display: Antares-specific -> web display, root plotter, ...