Global E2ECU

Roberto Sabatino – DANTE

LHC OPN meeting

Cambridge 12 Jan. 2007

Problem statement

- The E2ECU function provided by GEANT2 NOC operates from 06:00 to 22:00

- This is OK for European T1 sites as very few (none ?) NREN operates 24x7

- 8 hours a day where North American and Asian T1 centres cannot avail of the E2ECU functions

- How to ensure **round-the clock, global**, availability of E2ECU functions ?
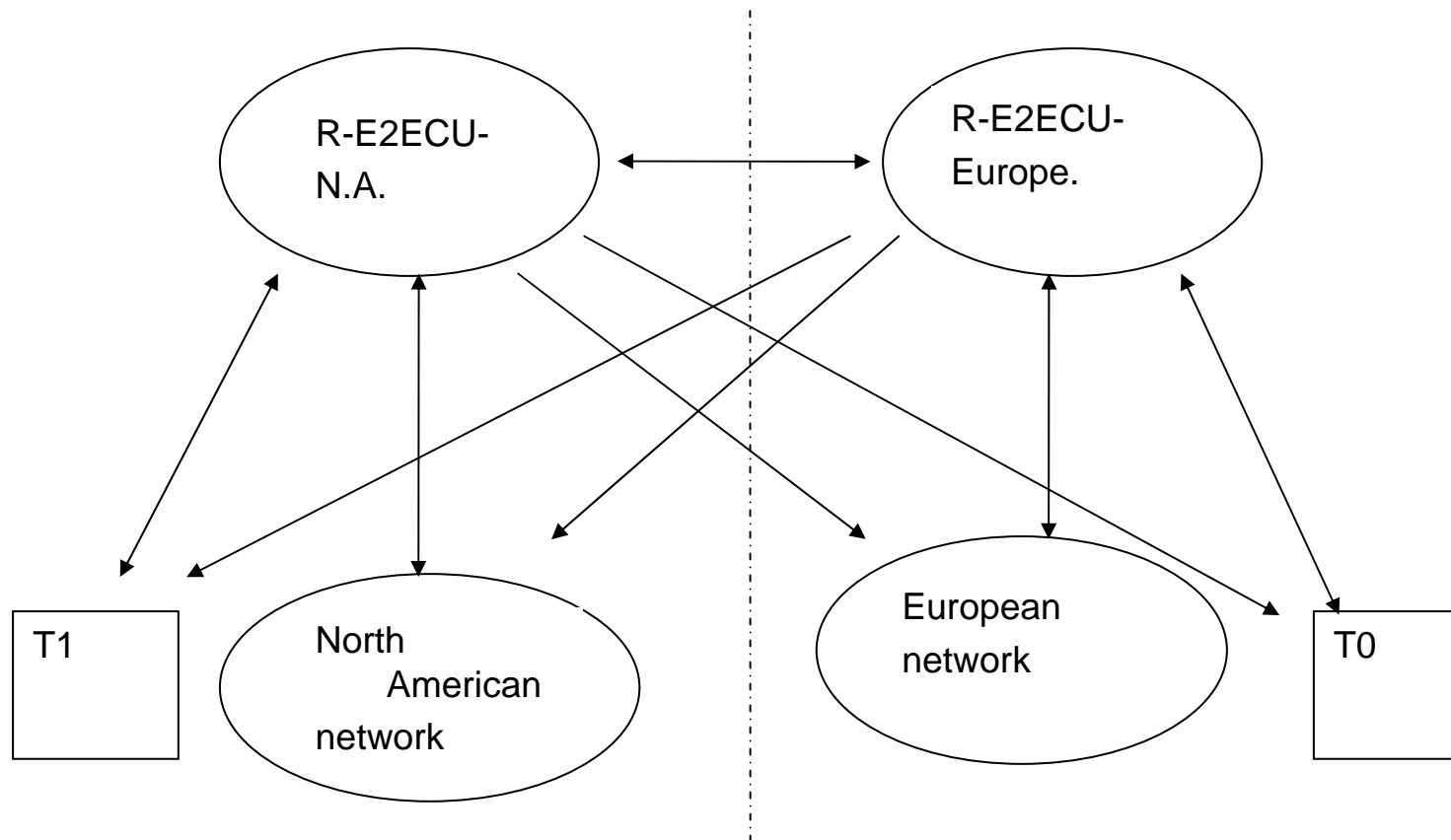
Here's an idea

- Establish *regional E2ECUs* (R-E2ECU) and establish communication/coordination procedures amongst them

- Each regional E2ECU owns fault resolution within corresponding region and co-ordinates with other regions
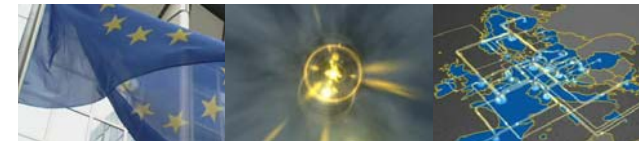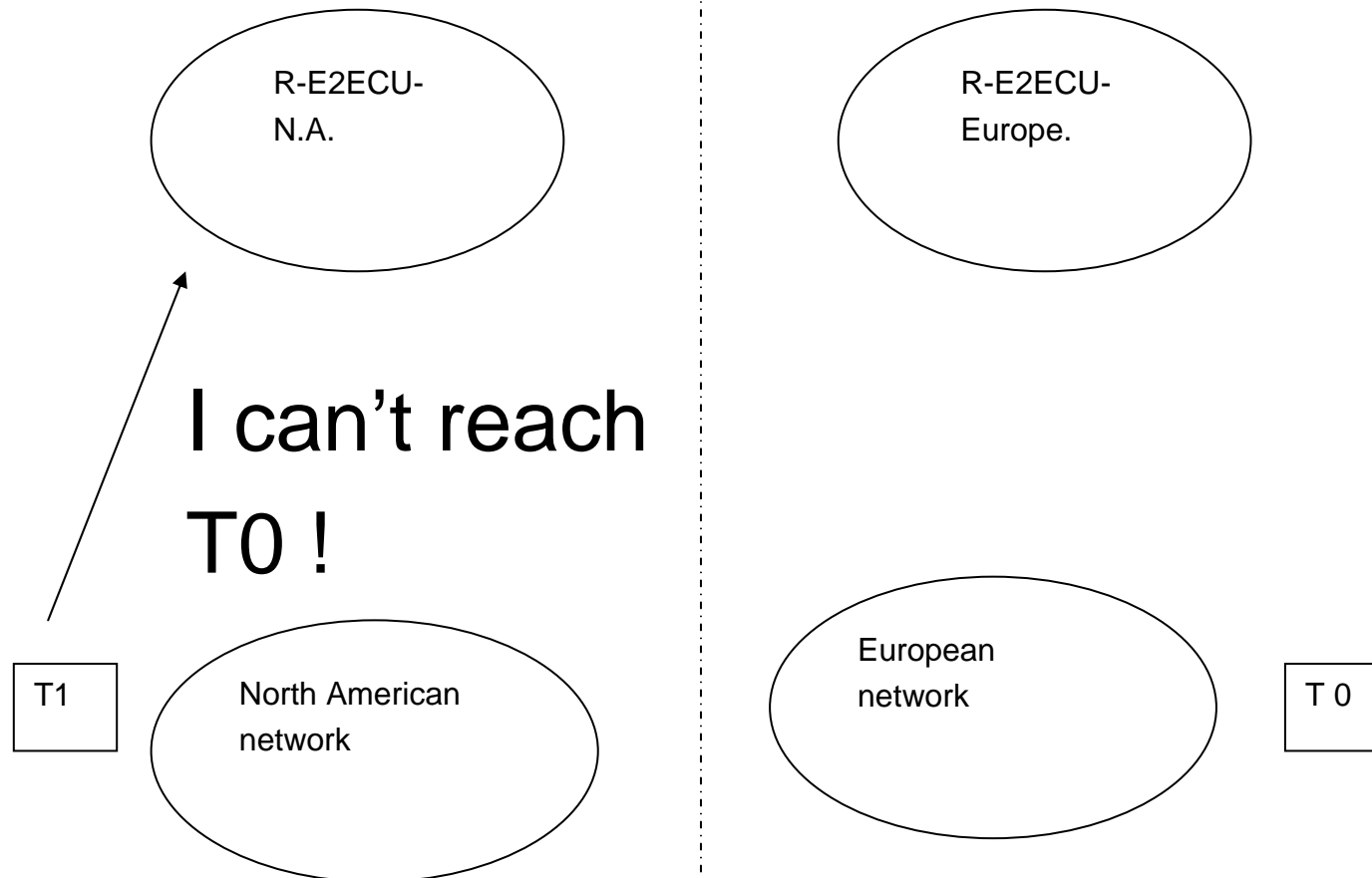
GEANT2

DANTE

Communication between R-E2ECUs

Sample Use case : T1 notices fault to T0, step 1

R-E2ECU-N.A.

R-E2ECU-Europe.

I can't reach T0 !

T1

North American network

European network

T 0

Sample Use case : T1 notices fault to T0, step 2
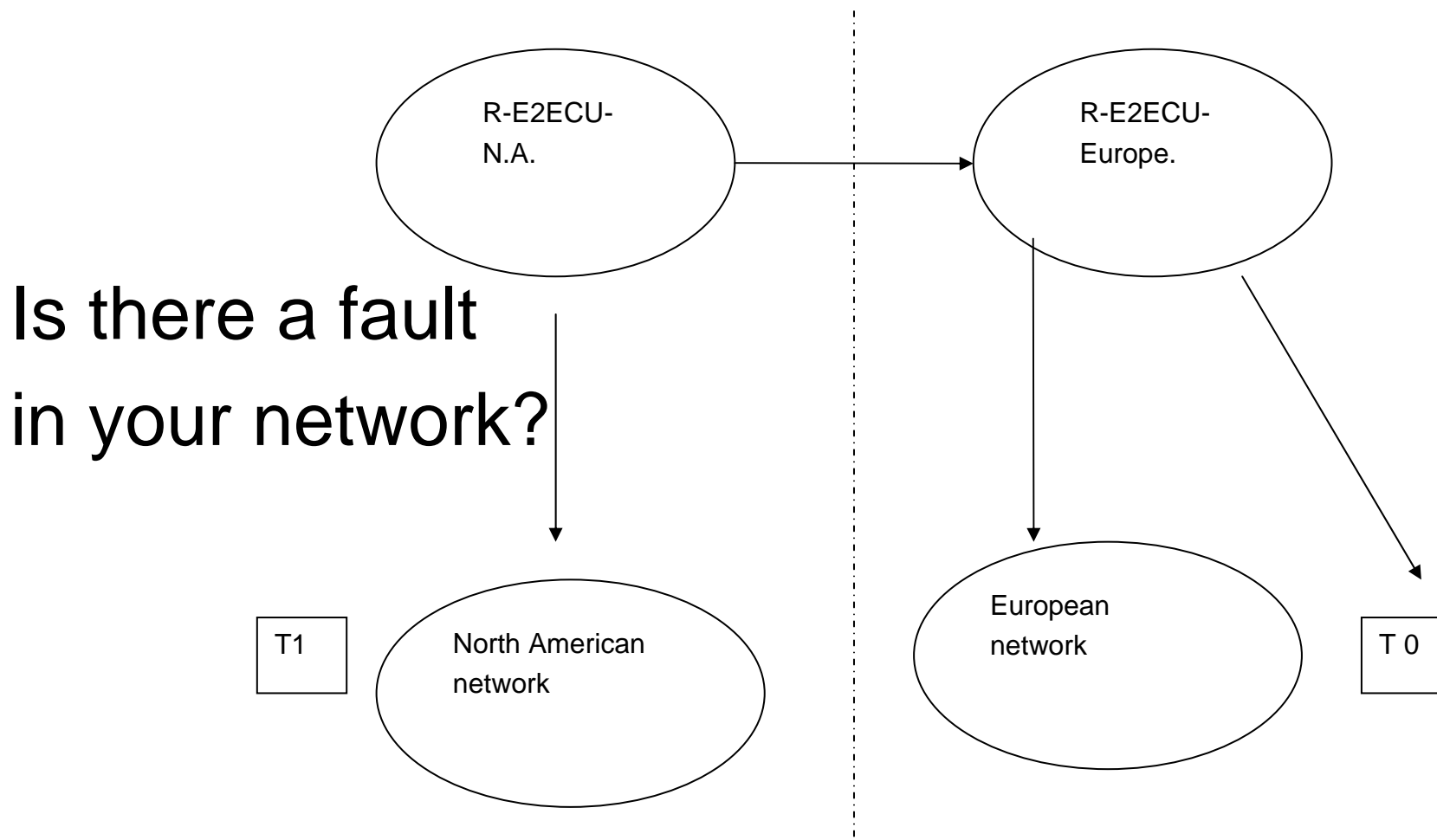
R-E2ECU-N.A.

R-E2ECU-Europe.

Is there a fault

in your network?

T1

North American network

European network

T 0

GE★NT2

DANTE

Sample Use case : T1 notices fault to T0, step 3

R-E2ECU-
N.A.

R-E2ECU-
Europe.

Yes, I have
a fault !

T1

North American
network

European
network

T 0

GE★NT2

DANTE

Sample Use case : T1 notices fault to T0, step 4

R-E2ECU-N.A.

R-E2ECU-Europe.

Found it !

T1

North American network

European network

T 0

GE⋆NT2

DANTE
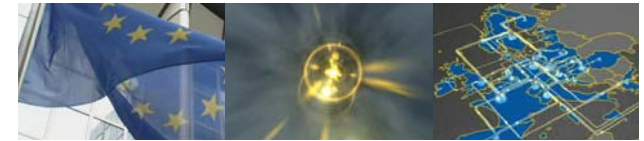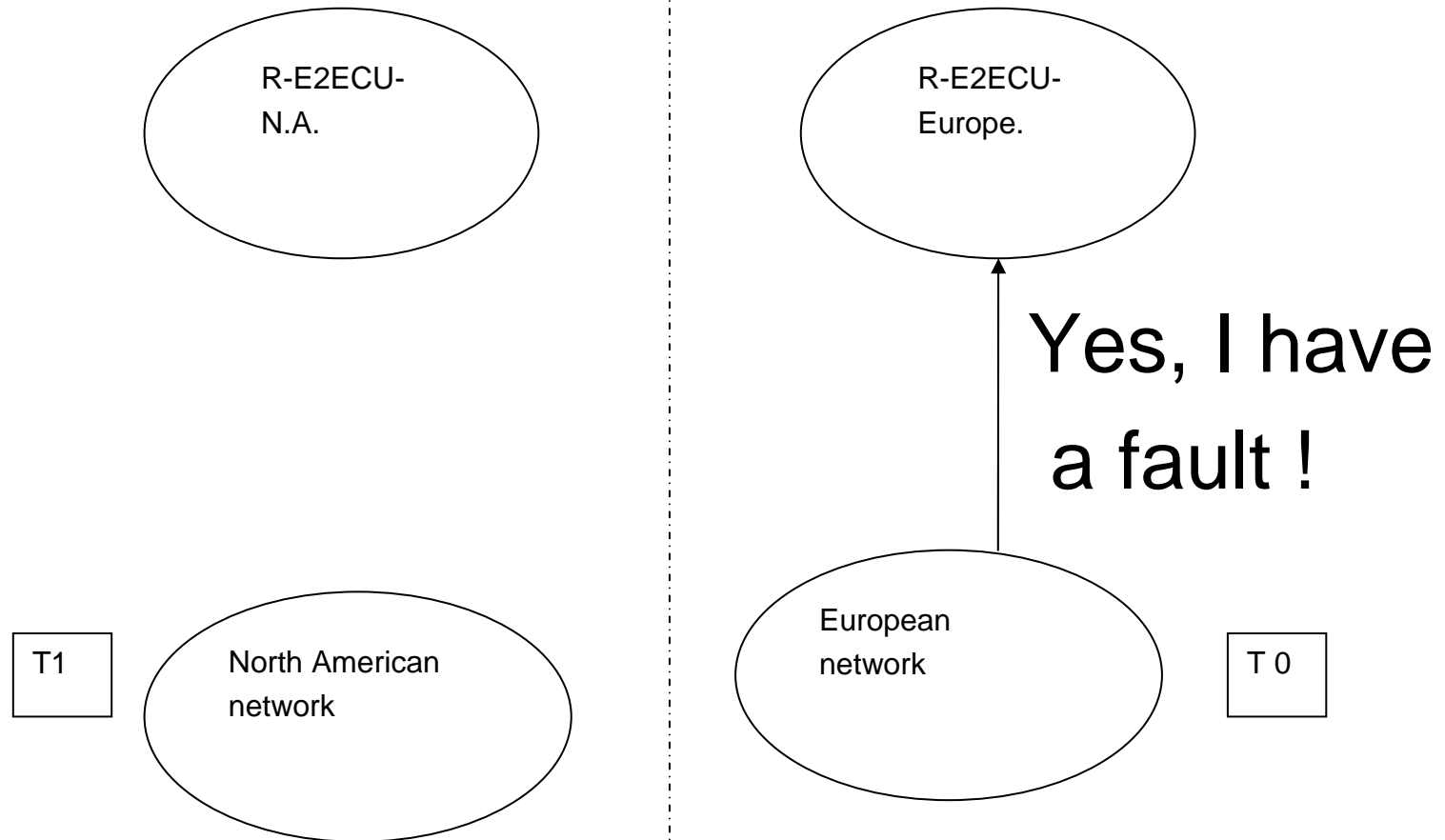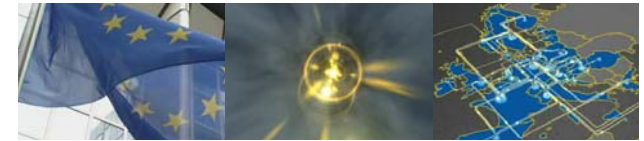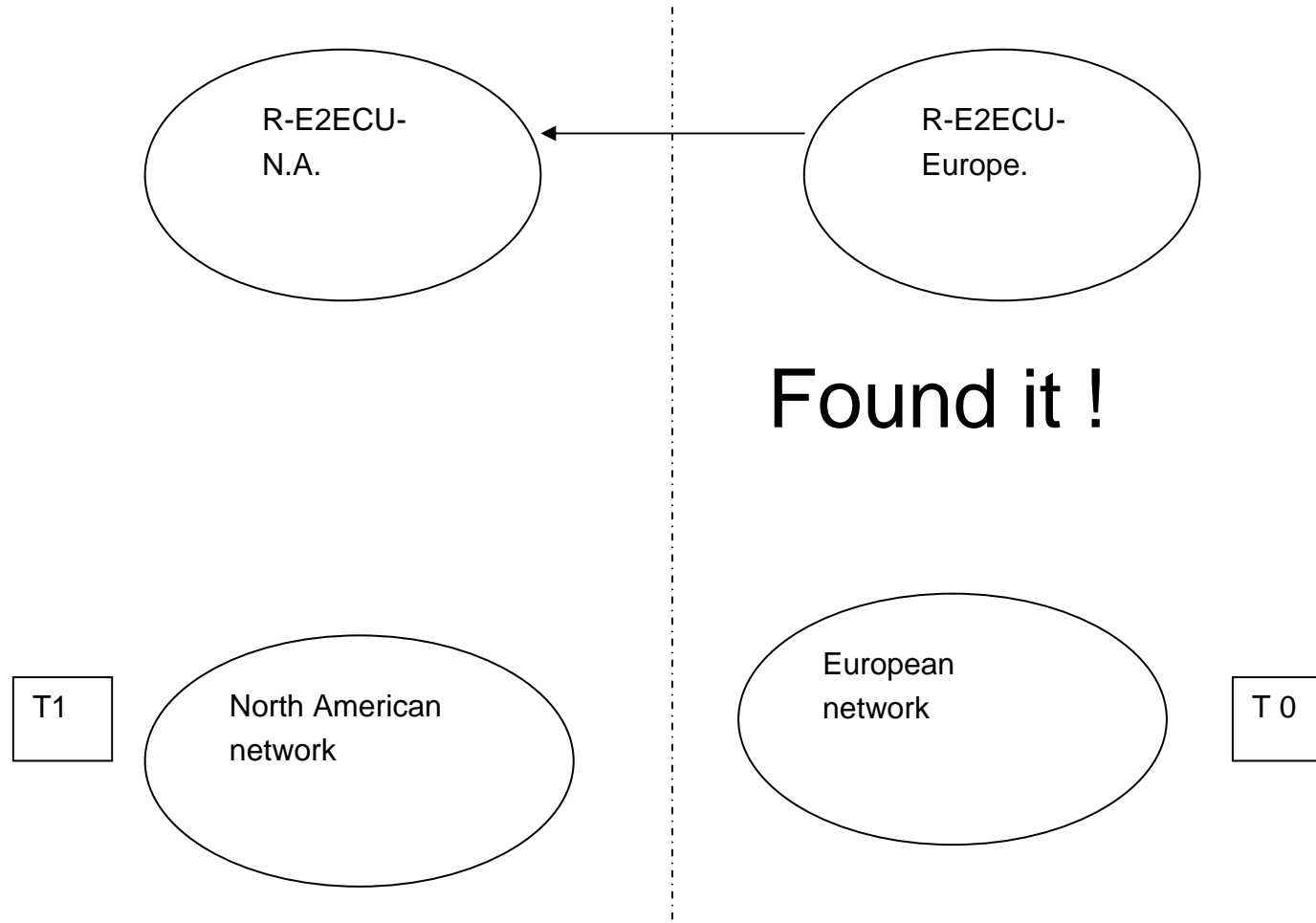
Sample Use case : T1 notices fault to T0, step 5
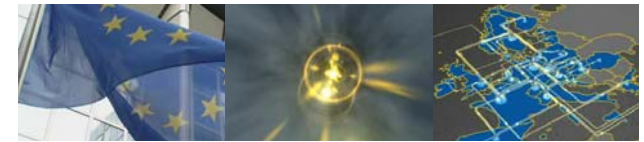
R-E2ECU-N.A.

R-E2ECU-Europe.

This is how I'm fixing the fault

T1

North American network

European network

T 0

GEANT2
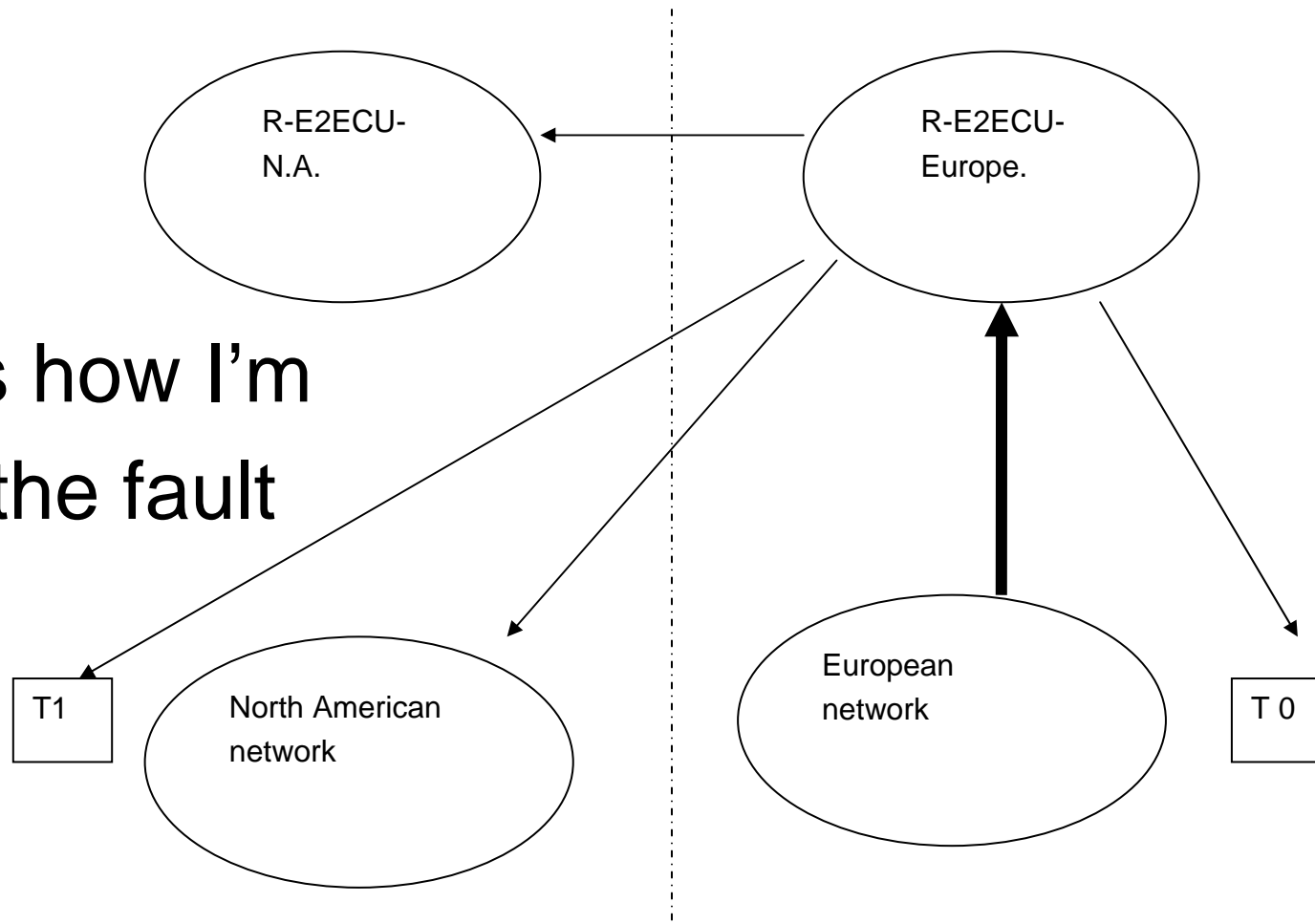
DANTE

Strengths

- each network will signal a fault to its corresponding R-E2ECU to ensure coverage of hours of operation

- Confidence that problem "is in good hands"

- Builds on established concepts, (the E2ECU), which will possibly be mirrored in other regions for regional needs

Weaknesses

- Not a true 24x7 : faults will be followed up according to the operating times of the domain where the fault resides
  - True 24x7 can only be achieved by having all networks and 1 E2ECU operating 24x7

- Cumbersome

Conclusion ?

- True 24x7 very unlikely to/cannot be achieved

- Is the single E2ECU sufficient and we live with 06:00-22:00 CET coverage ?

- Or should we make this extra effort for a small gain in response time coverage?

My own view

- The one (soon to be operational) E2ECU provided by the GEANT2 NOC is sufficient **to start with**.
    - It can be extended to provide *global* coverage, but **not round the clock**

- *Extended hours* can be achieved as and when other regional E2ECUs become available and we co-ordinate communication between them