SRC | Net

SKAO Regional Centre Network

Execution Broker

Progress report

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22nd May2025

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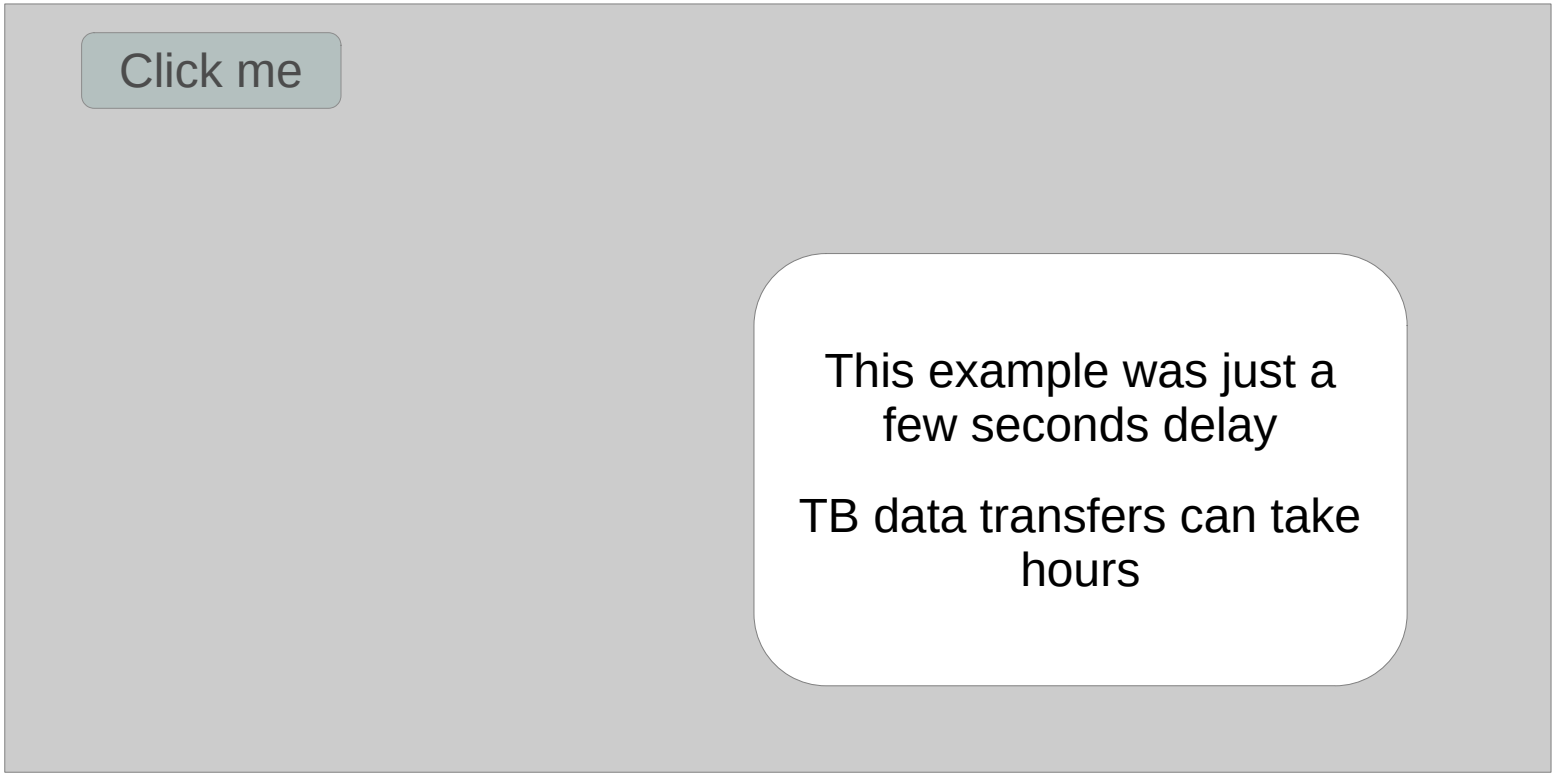
The problem :

http://www.metagrid.co.uk/example-one



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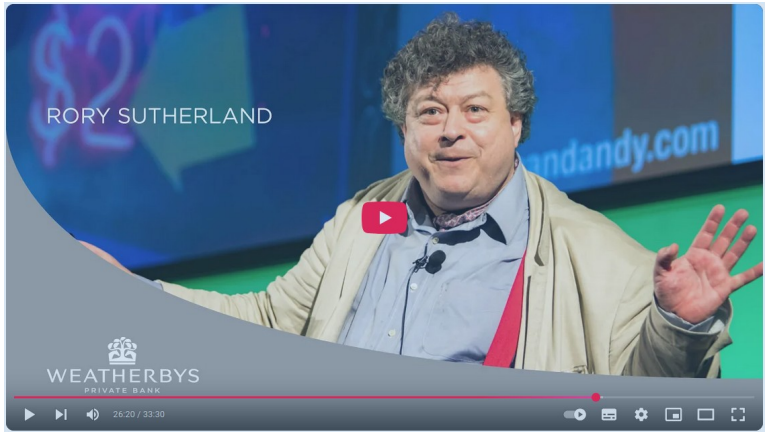
The problem :

COR-755 [ExecBroker]
What the Execution Broker does and how it can contribute to SRCNet
https://confluence.skatelescope.org/pages/viewpage.action?pageId=306954710

Lost time happens when someone has to stop what they are doing and wait for something to happen, but they can't use the time for anything else.

Hacking The Unconscious - Rory Sutherland
https://www.youtube.com/watch?v=1ei6F3dk4gE&t=1580s



Uber - provides us with the information we need that's relevant at the point at which we we travel through the booking process.

... it doesn't have to reduce the waiting time it just has to reduce the uncertainty ...

.... we're actually happier waiting nine minutes for a train knowing it's nine minutes than waiting four minutes for a train in a state of not-knowing ….

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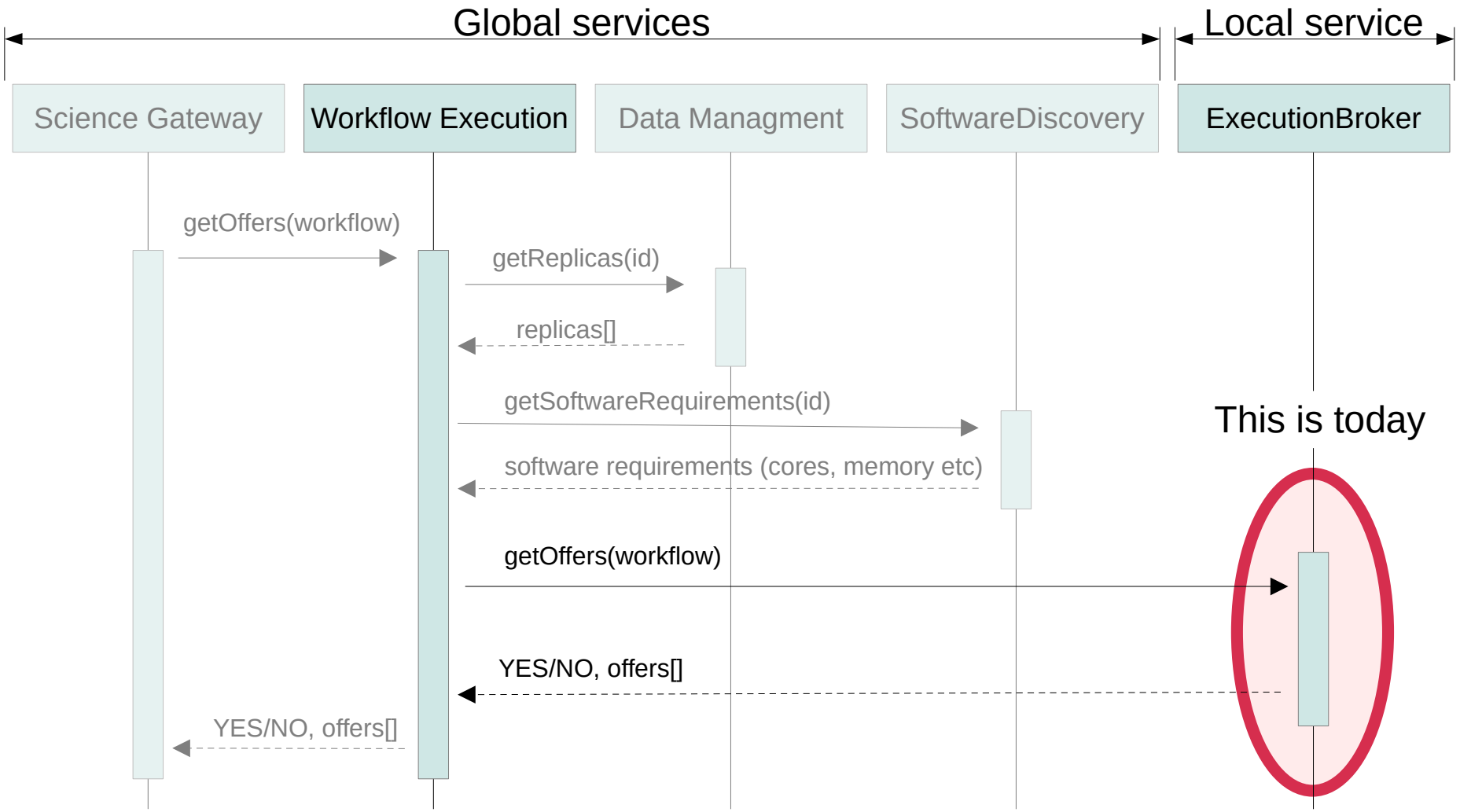
The sequence diagram

https://confluence.skatelescope.org/pages/viewpage.action?pageId=311713724



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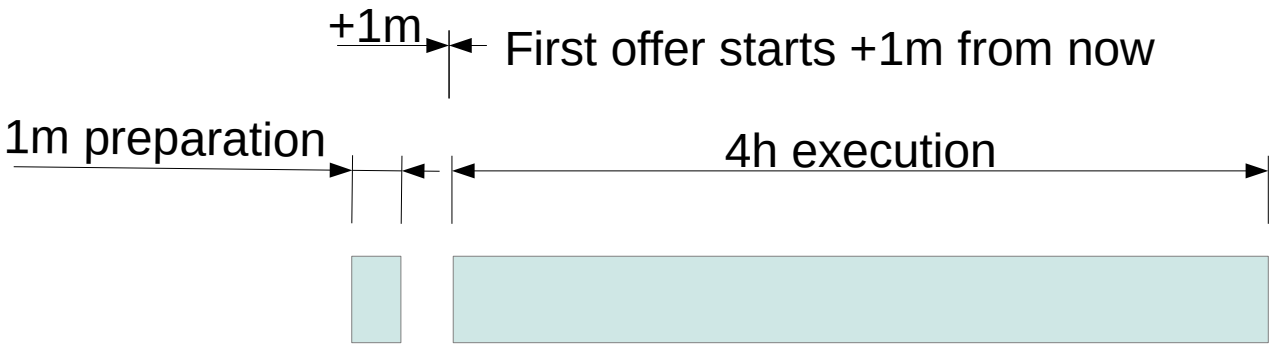
One 250GB file in the local filesystem

Example 1

- Compute resource at AUSRC.
- 250GB data resources available from :
  1. AUSRC_STORM, JPSRC_STORM, and SPSRC_STORM

- The replicas at AUSRC have a zero transfer time
- The replicas at JPSRC have a 2s/GB transfer rate => 9min
- The replicas at SPSRC have a 4s/GB transfer rate => 18min



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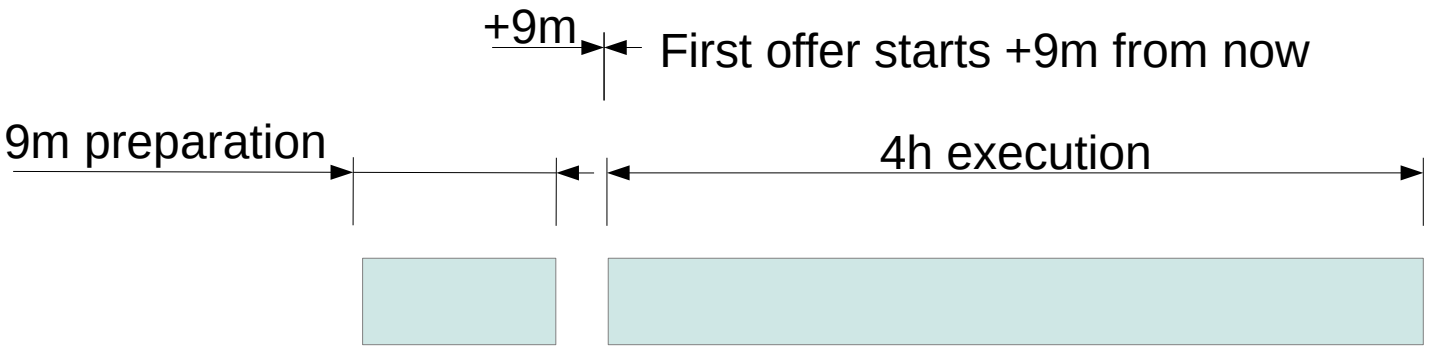
Two 250GB data files,
one in the local filesystem
one a medium distance away

Example 2

- Compute resource at AUSRC.
- 2 x 250GB data resources available from :
  1. AUSRC_STORM, JPSRC_STORM, and SPSRC_STORM
  2. JPSRC_STORM, and SPSRC_STORM

- The replicas at AUSRC have a zero transfer time
- The replicas at JPSRC have a 2s/GB transfer rate => 9min
- The replicas at SPSRC have a 4s/GB transfer rate => 18min



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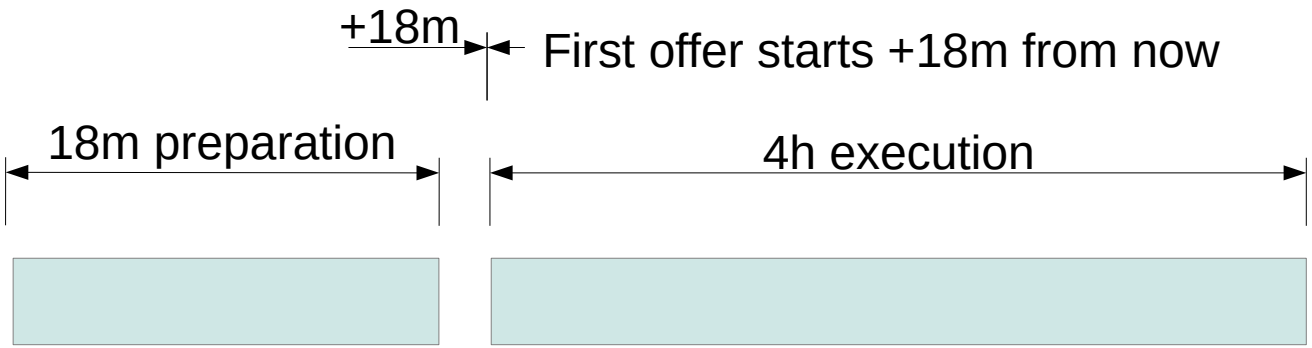
Three 250GB data files,
one in the local filesystem
one a medium distance away
one a long way away

Example 3

- Compute resource at AUSRC.
- 3 x 250GB data resources available from :
  1. AUSRC_STORM, JPSRC_STORM, and SPSRC_STORM
  2. JPSRC_STORM, and SPSRC_STORM
  3. SPSRC_STORM only
- The replicas at AUSRC have a zero transfer time
- The replicas at JPSRC have a 2s/GB transfer rate => 9min
- The replicas at SPSRC have a 4s/GB transfer rate => 18min



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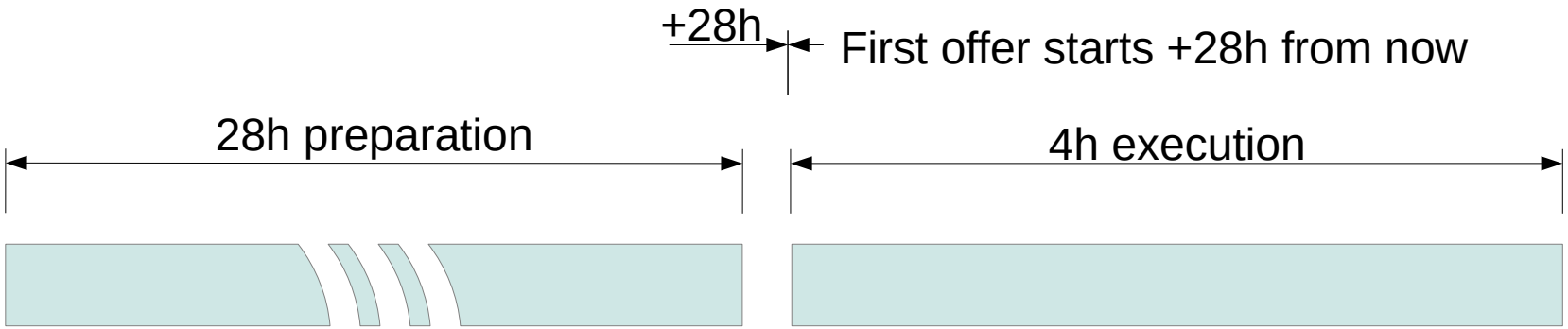
Three **25TB** data files,
one in the local filesystem
one a medium distance away
one a long way away

Example 4

- Compute resource at AUSRC.
- **3 x 25600GB** data resources available from :
  1. AUSRC_STORM, JPSRC_STORM, and SPSRC_STORM
  2. JPSRC_STORM, and SPSRC_STORM
  3. SPSRC_STORM only
- The replicas at AUSRC have a zero transfer time
- The replicas at JPSRC have a 2s/GB transfer rate => 14h
- The replicas at SPSRC have a 4s/GB transfer rate => 28h



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Engage in a conversation with our customers

I would like an ice cream cone with chocolate sauce, hazelnuts, and sprinkles

You can have the ice cream now

Chocolate sauce and hazelnuts will be ready in 20 min

We don’t have any sprinkles right now, but we will have some tomorrow

OK, ice cream with chocolate sauce and hazelnuts please

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The sequence diagram

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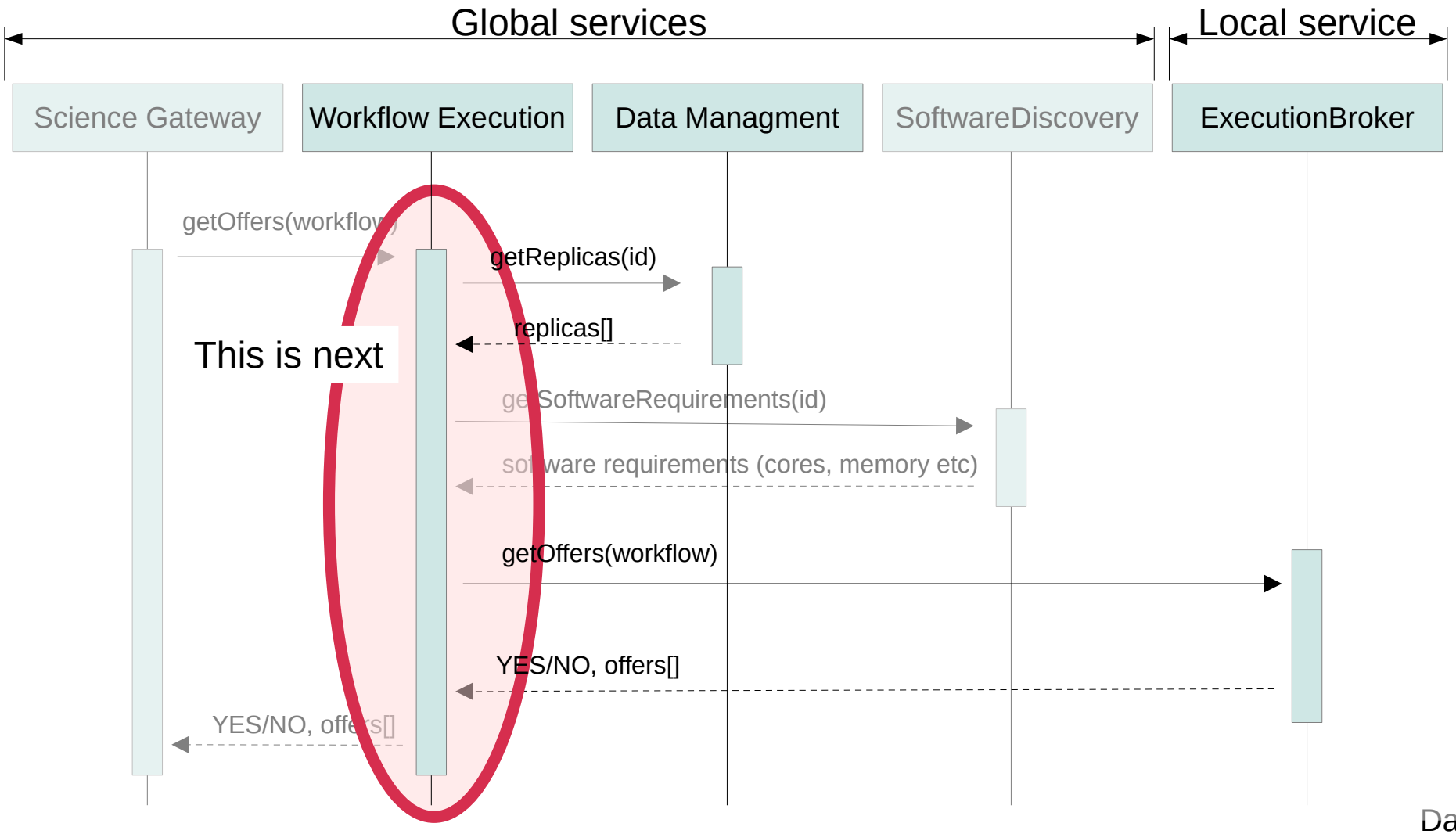

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