BTF: A CASE STUDY

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BTF: A CASE STUDY

› Another company showed interest in tracing, this is an opportunity to have another partner contributing, giving feedback, etc...

› People from Bosch have a pre-defined trace format. How can we work with it?

- Possibility 1- convert internal format to CTF, view with Babeltrace/LTTv/Trace Compass/TMF...
- Possibility 2- make TMF read BTF format traces
- We chose: BOTH

BTF SPECIFICATION

› BTF: Best Trace Format.

› BTF spec is a CC-BY-SA – like license

› BTF uses:

  − Plain text

  − Pre-defined event types

  − Metadata

  − Details about the events

  − Supplied state systems

  − Supplied suggested views

  − In fact, it's more of a trace domain!

WHAT WAS DONE

› BTF native parser

› Custom events table

› Properties

› Custom state systems (in java)

› Custom viewer (XML defined)

› Reports view prototype

› Test cases!

IMPLEMENTING THE BTF PROTOTYPE

› Took 1 week for 2 developers

› 1-2 weeks for clean up afterwards

› It took longer to get the permission to show our work than to implement it!

PARSER

› Simple text parser

› Creates specific event types

› All the documentation was copied into the event types to give clear descriptions when available

› O(1) seeks
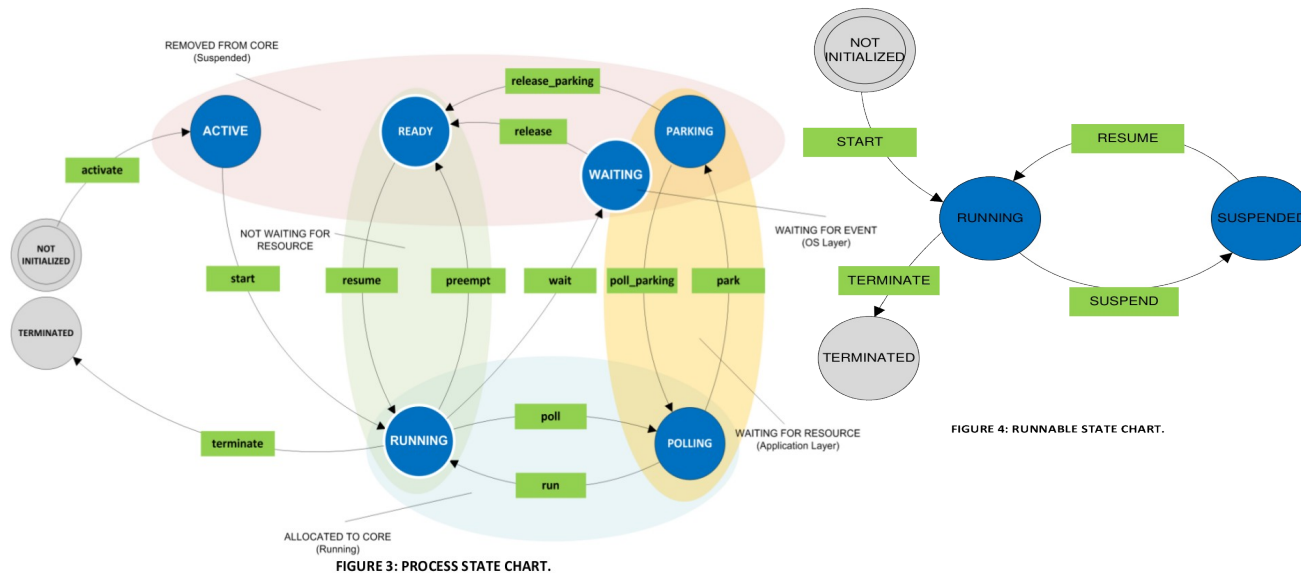
› Using absolute time if the creation time is available

CUSTOM TABLE/PROPERTIES

› Custom Table with columns that are equivalent to the fields in the BTF file

› Searching and filtering work

› Trace properties include metadata

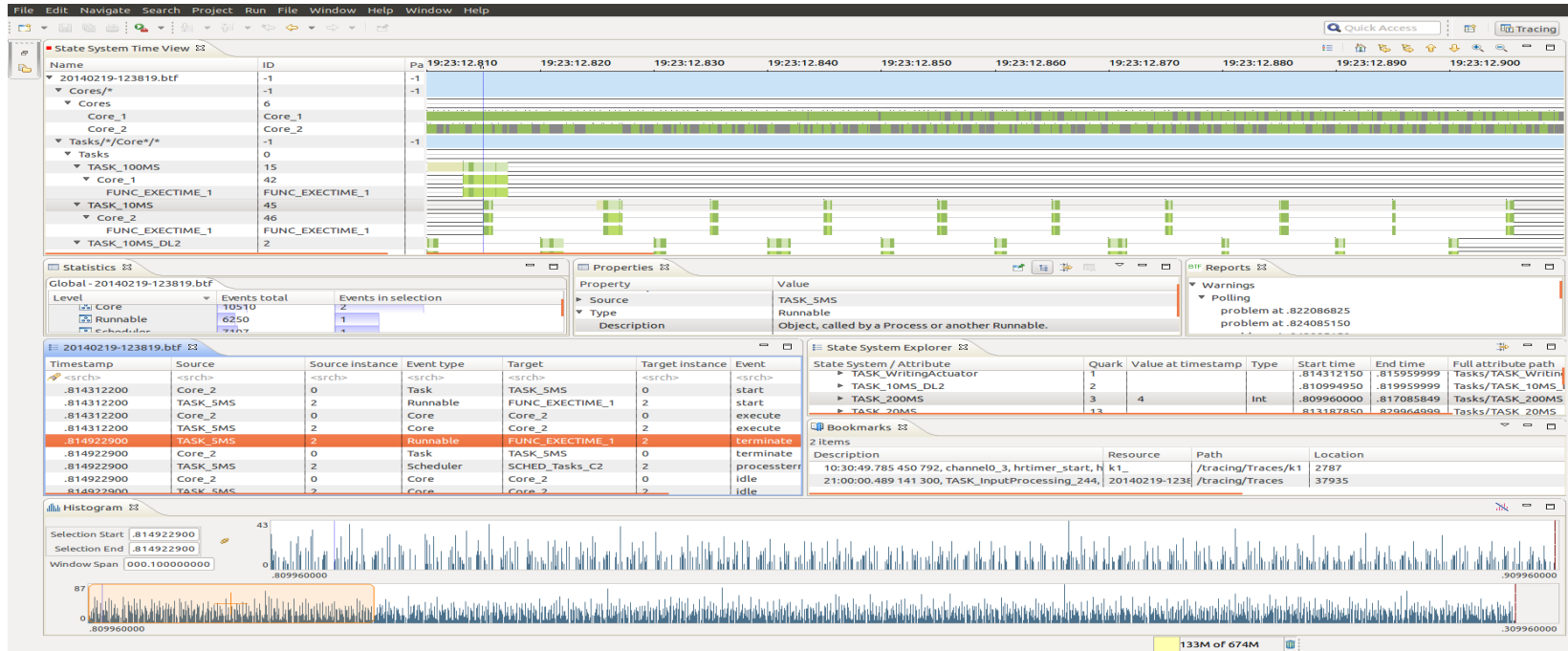› Event properties show detailed information

STATE SYSTEM

› Simple to add, as it has been defined in the specification

FIGURE 3: PROCESS STATE CHART.

FIGURE 4: RUNNABLE STATE CHART.

CUSTOM VIEWER

› XML defined
› Under 50 lines!

BTF: WHAT'S NEXT?

› Immediate
- Hand over to Bosch and their partners

› Short term
- Task Migration views
- Real reports view

› Long term
- Latency views
  › Task activation delay
  › Time to lock a resource
  › Time a resource is locked
  › Task execution jitter
- Critical path

DEMO HTTP://YOUTU.BE/T4F5KU2A6RC

QUESTIONS?

Thank you for your interest

PS. Thanks Florian!