

# Design Rationale Extraction and Management

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# Context & Problem

- Software development is a process that requires making several decisions.
- The logic behind these decisions, or the *rationale* represents very beneficial information.
  - No end-to-end pipeline rationale extraction and management
  - No representation that considers the historical evolution
  - No generic/context-independent work

# A motivating example

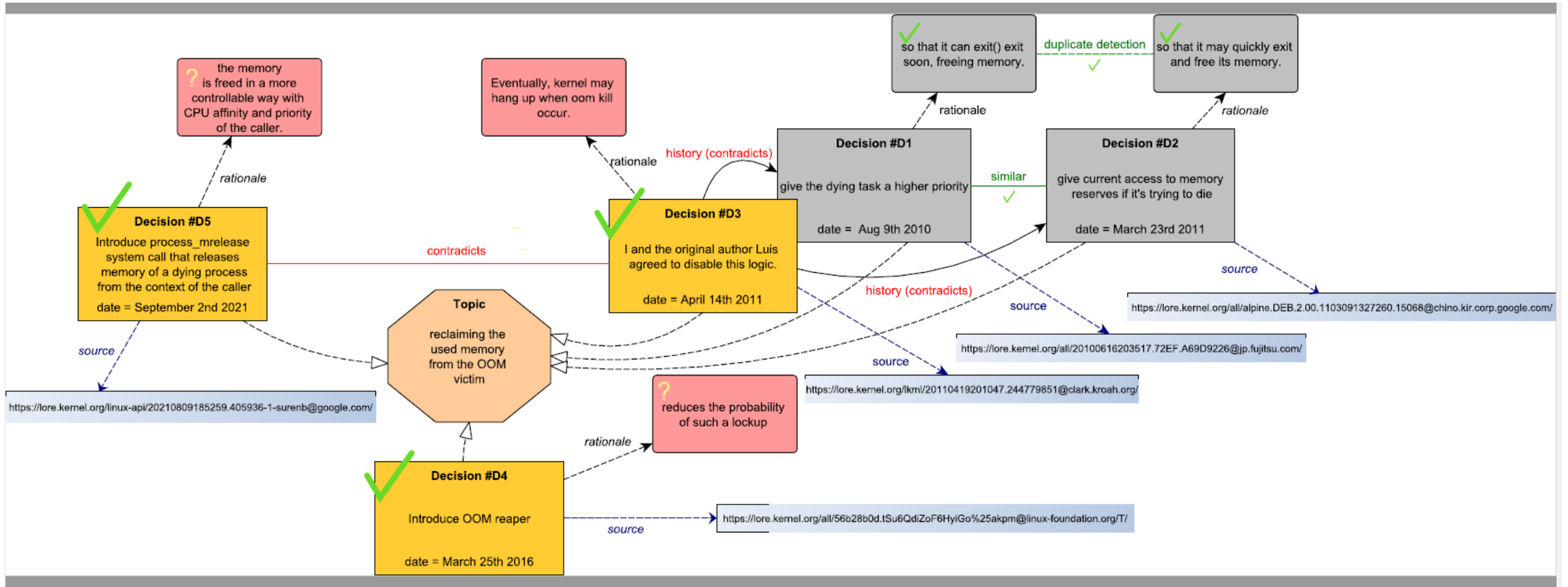
TABLE I  
COMMITTS ABOUT RECLAMATION OF MEMORY IN THE OOM KILLER.

Summary	Date	Description
<code>oom: give the dying task a higher priority</code>	Aug 9 2010	Increase the dying task's priority to the lowest real-time level such that it is scheduled sooner and can free its memory
<code>memcg: give current access to memory reserves if it's trying to die</code>	Mar 23 2011	Within a <i>control group</i> of threads, increase the priority of a dying task,
<code>oom-kill: remove boost_dying_task_prio()</code>	Apr 14 2011	Threads with real-time priorities placed within the <i>cpu control group</i> could never run, causing the kernel to hang. The code from the previous two patches was therefore removed.
<code>mm, oom: introduce oom reaper</code>	Mar 25 2016	A kernel thread is used for recovering memory ( <i>reaping</i> ) from dying threads, to improve reliability <sup>a</sup> .
<code>mm: introduce process_mrelease system call</code>	Sep 2 2021	Introduce a mechanism such that a user process (such as the Android process manager) can request that the memory of a dying thread is reaped <sup>b</sup> .

<sup>a</sup>See <https://lwn.net/Articles/668126/>.

<sup>b</sup>See <https://lwn.net/Articles/864184/>.

# The expected Result



# Current challenges

- How to extract topics or concepts / a hierarchy of concepts ?
  - How to generate the topic's title?
- A context-independent/generic design decisions classifier ?

# What's Next ?

- Once we have the graph,
  - Consistency checking mechanism
  - A retrieval system

# Help me make the next years of my life easier :)

- These are initial steps for my PhD
- Comments?
- Ideas I could use ?
- Critiques?