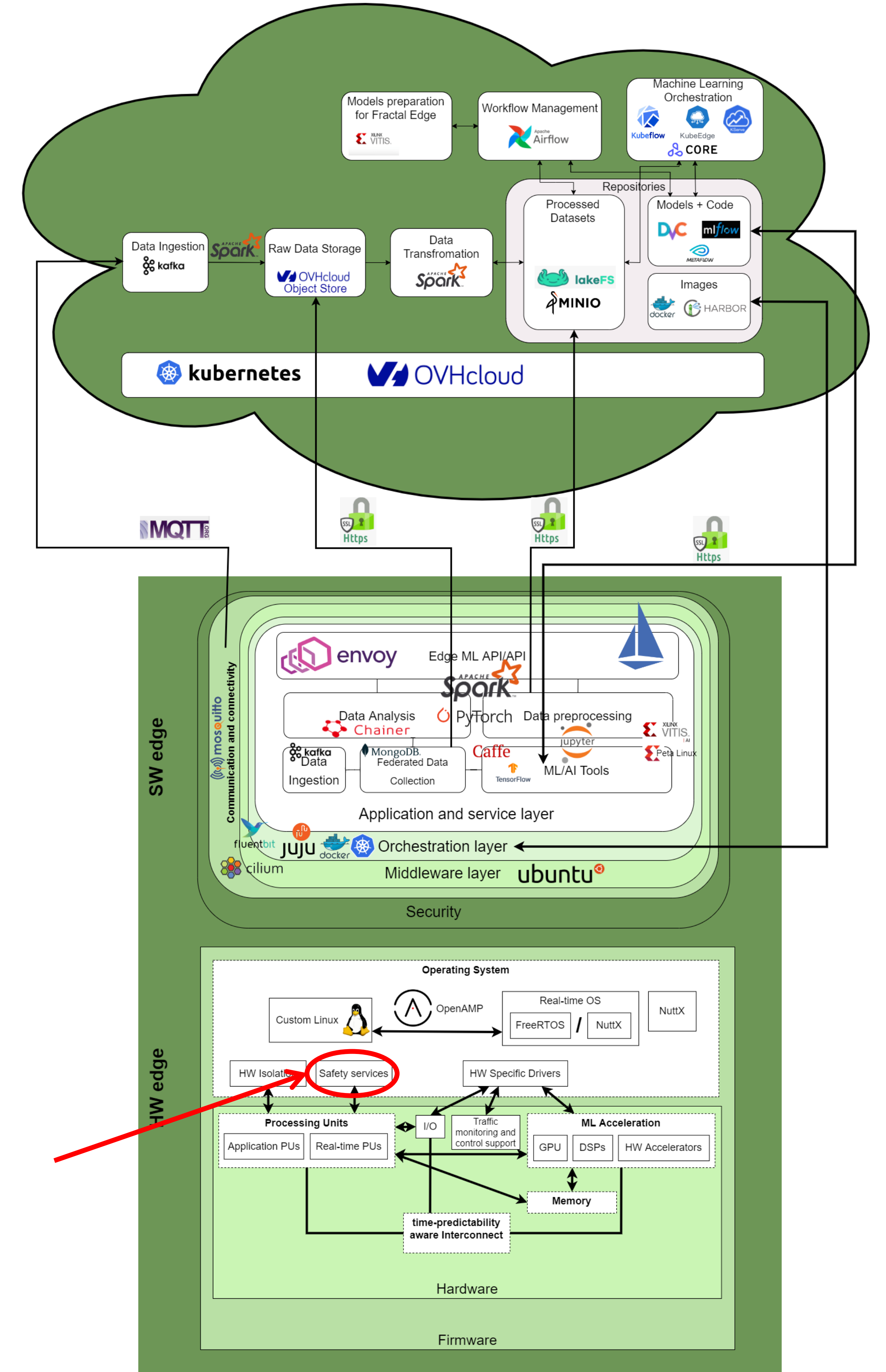


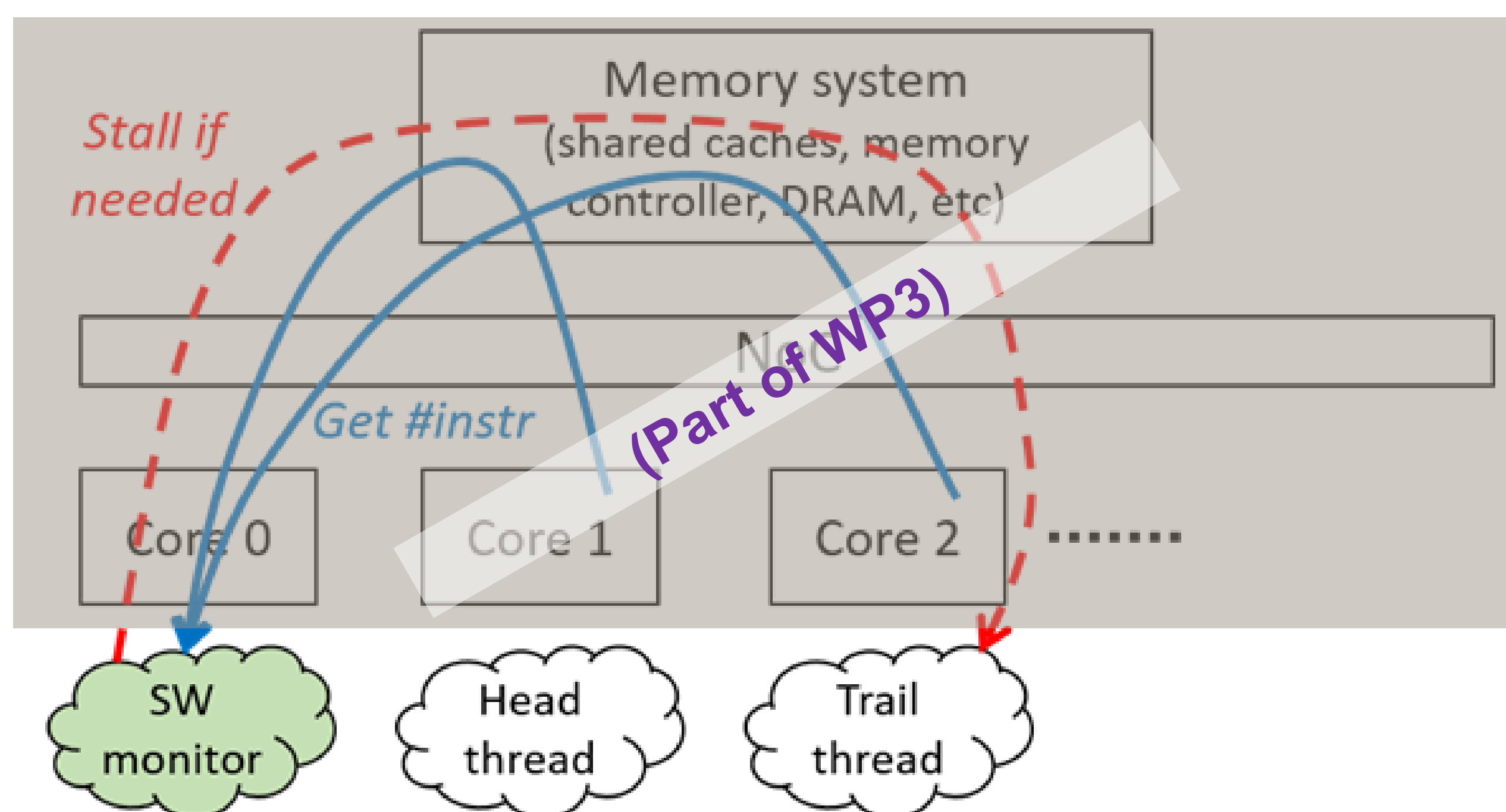
### Component description

### Component location

- Objective of the component:
  - Library allowing to run a task redundantly in two RISC-V cores enforcing some staggering among them to avoid common cause faults (WP4T43-03)
- Fractal Features associated:
  - SAFETY → REDUNDANCY → PROCESSES (WP4T43-03)
  - SAFETY → REDUNDANCY → DIVERSE REDUNDANCY (WP4T43-03)
- Inputs/Outputs:
  - (input) end user application/function requiring diverse redundancy
  - (output) whether redundant and diverse execution completed successfully
- Integration:
  - NOEL-V
  - UC-7



### Images/Diagrams to describe the component and its processes



### Get started

The component can be used to implement a safety service by executing an end user application/function redundantly with time staggering to achieve some form of diversity to detect common cause failures (CCFs).

- (WP4) Run end user app/function redundantly on two cores;
- (WP3) Read instruction count from redundant cores;
- (WP4) If staggering too low then
- (WP3) stall trail core;
- (WP3) Else resume trail core (if stalled);
- (WP4) Repeat from STEP 2 until head core finishes;
- (WP4) Wait until trail core finishes;
- (WP4) Compare results from head and trail cores;
- (WP4) Report an error upon mismatch;