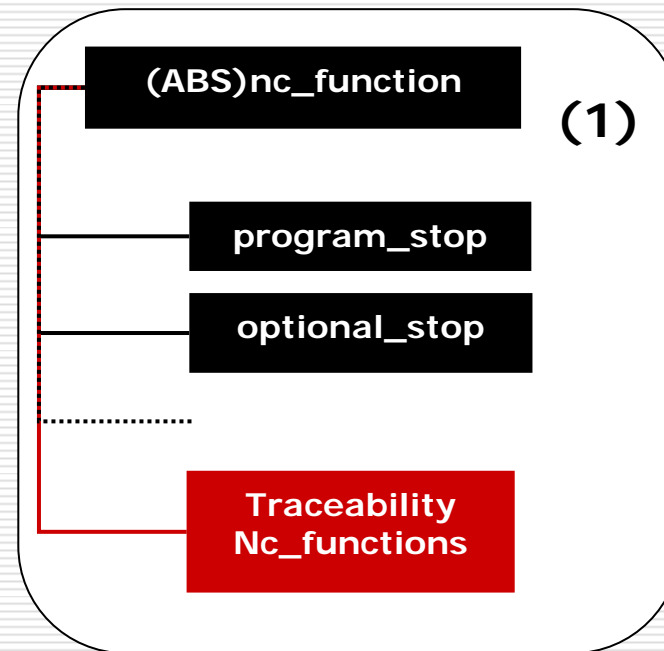


# How to record the data (I)

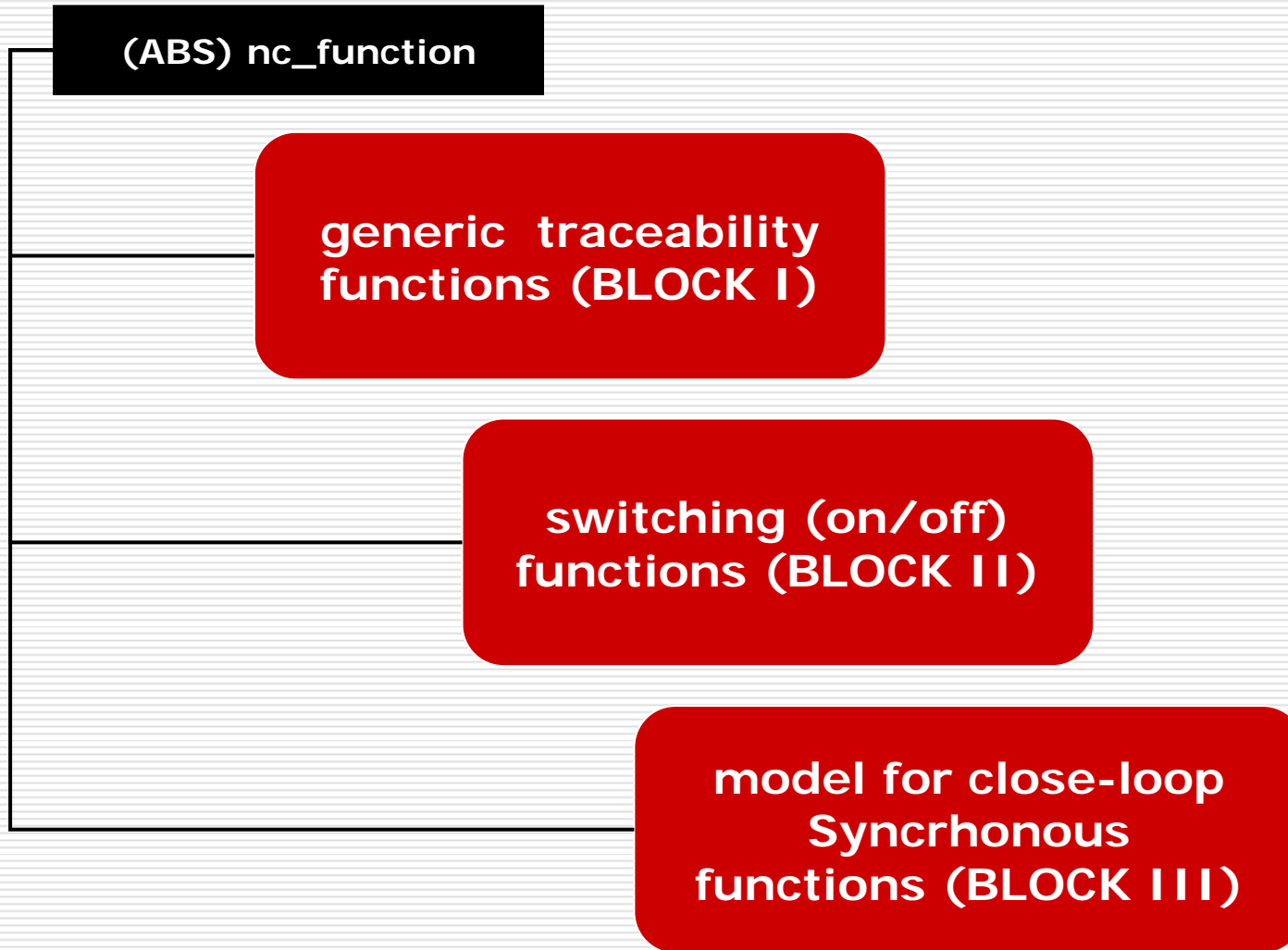
---

- Traceability nc\_functions FOR:
  - 1. Switching [Starting/Stopping] Data Collection Tasks
  - 2. Could also be used for Close Loop Tasks ??????



# Draft ARM for traceability nc\_functions.

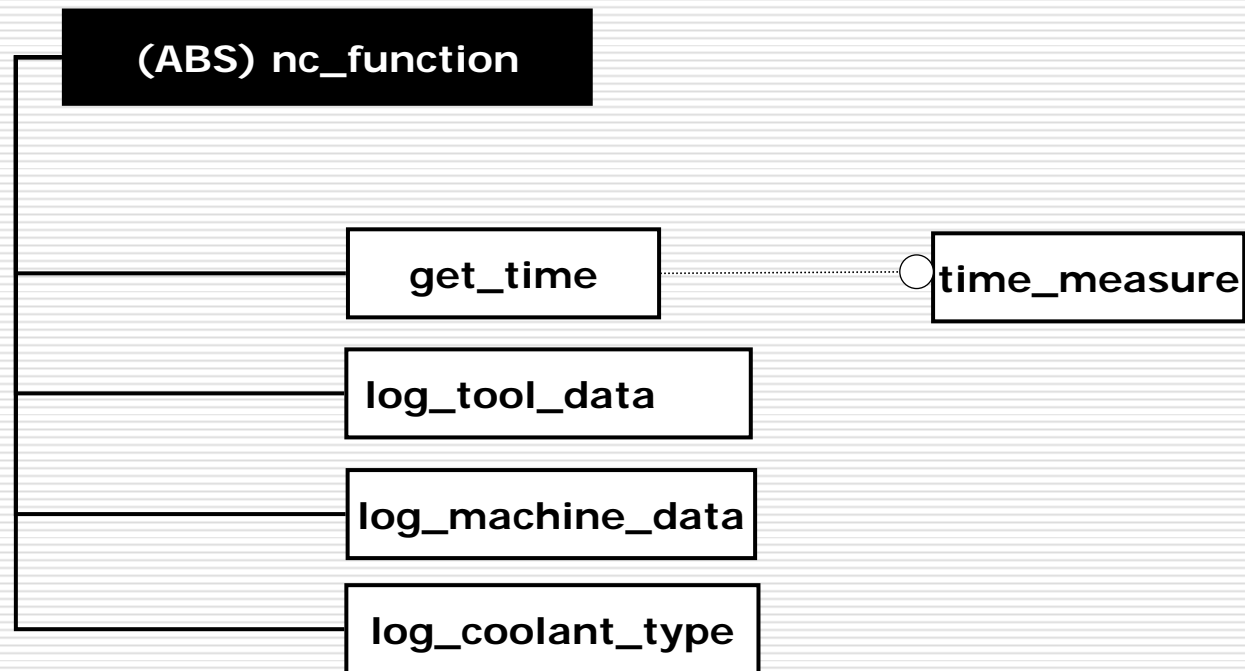
---



# Traceability nc\_functions. BLOCK I.

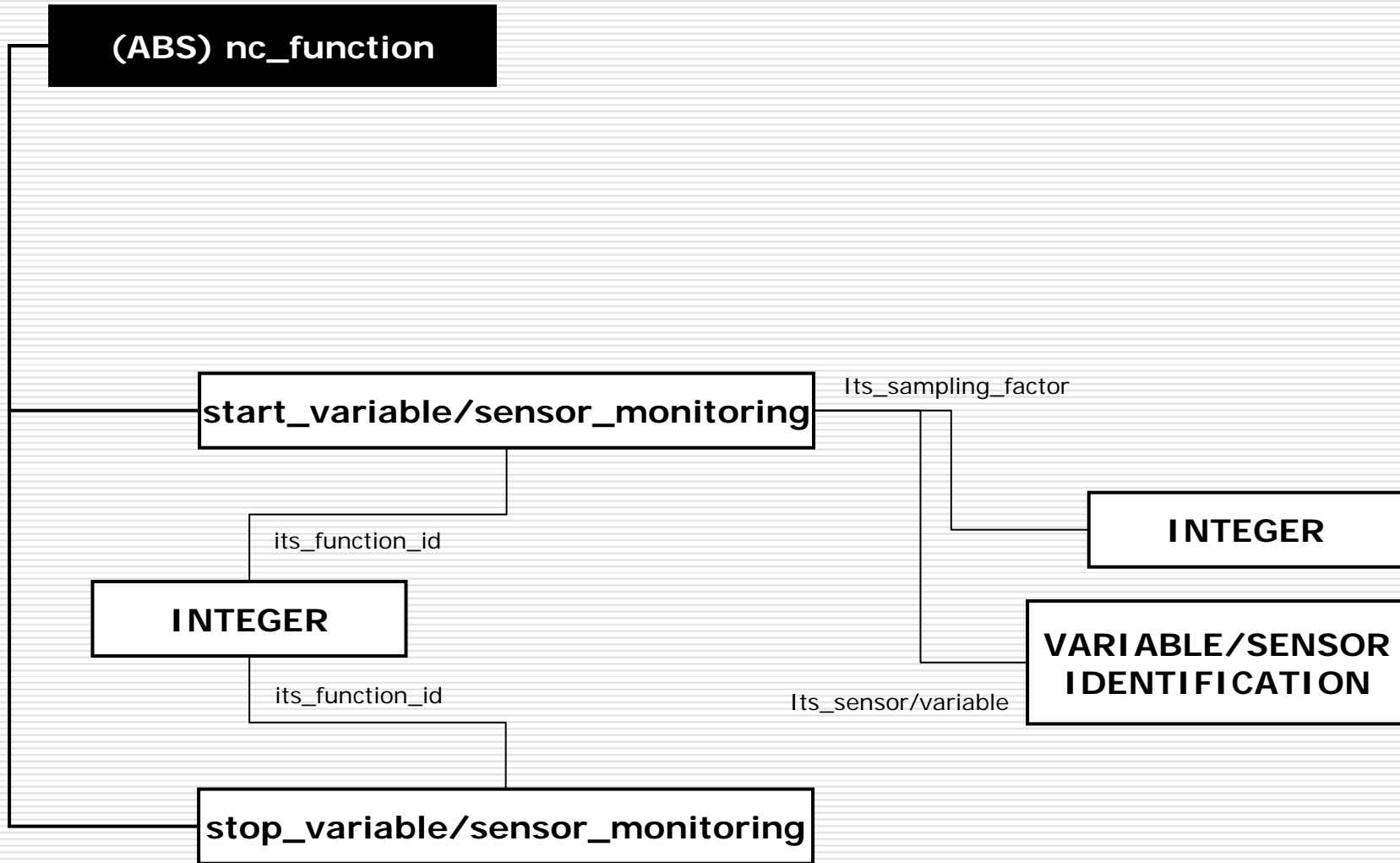
## Generic, single data functions

---



# Traceability nc\_functions. BLOCK II.

---



## Traceability nc\_functions. BLOCK II. Sample Functions

---

### □ ***Machining\_Parameters:***

- 1. Speeds: Cutting Speed, Spindle Speed and FeedRate Speed.
- 2. Depth of Cut
- 3. Coolant Pressures, Level and Temperatures.
- 4. Positions (relative/absolute):
  - 4.1 - Interpolated Positions by the CNC
  - 4.2 - Positions as given by the encoders
  - 4.3 – Axis 3D Displacements (tolerances)
- 5. Motor Currents or Powers (by Axis/Spindle/channel)
- 6. % of Drive Loads.
- 7. Machine Forces and Torques

### □ ***Tool Monitoring:***

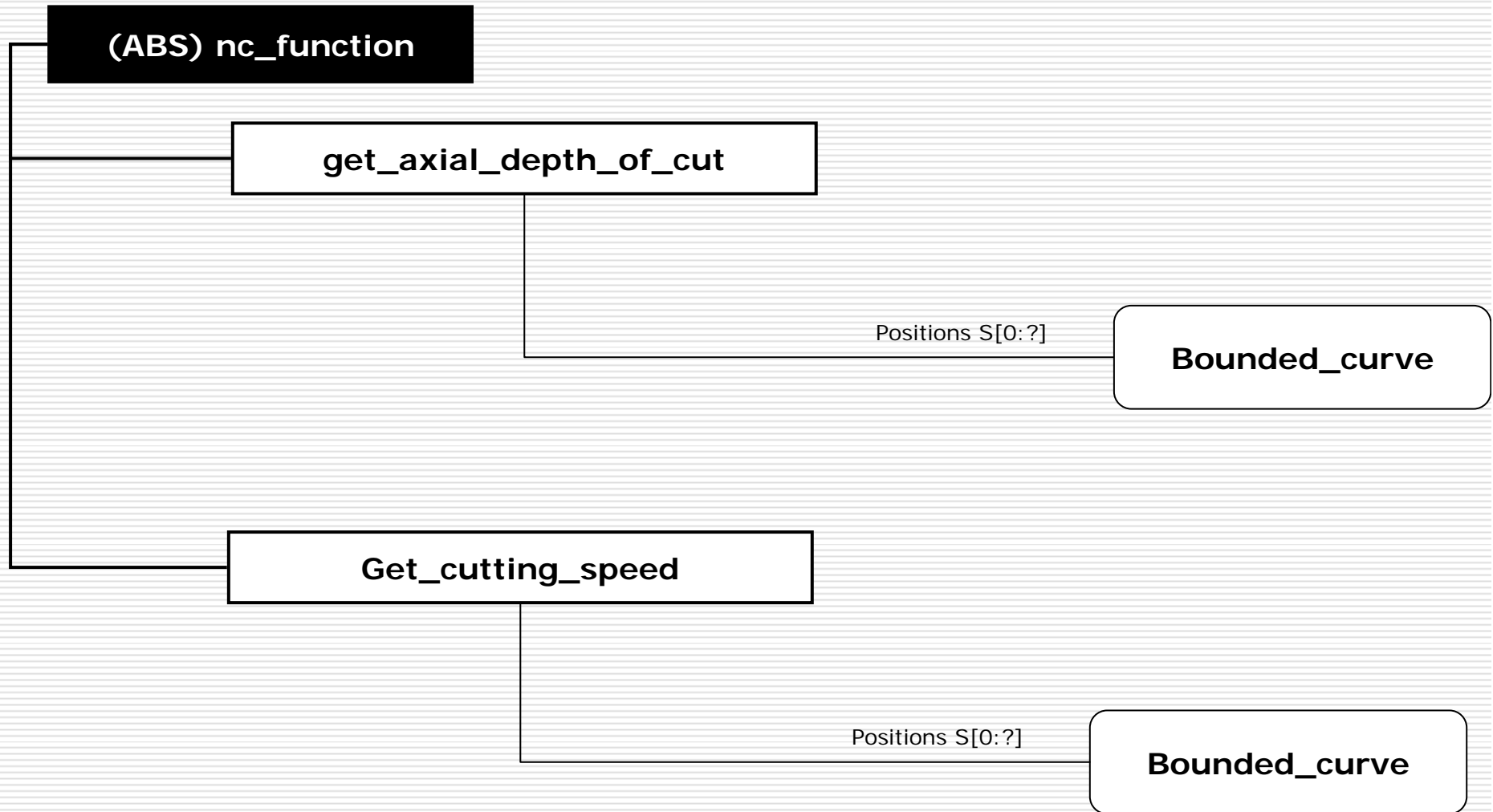
- 8. Tool Tip Temperature (Cutting Operation Temperature)
- 9. Tool Tip Vibration, A.E., tool sensor wear.

### □ ***Workpiece:***

- 10. Surface Finish (Roughness)
-

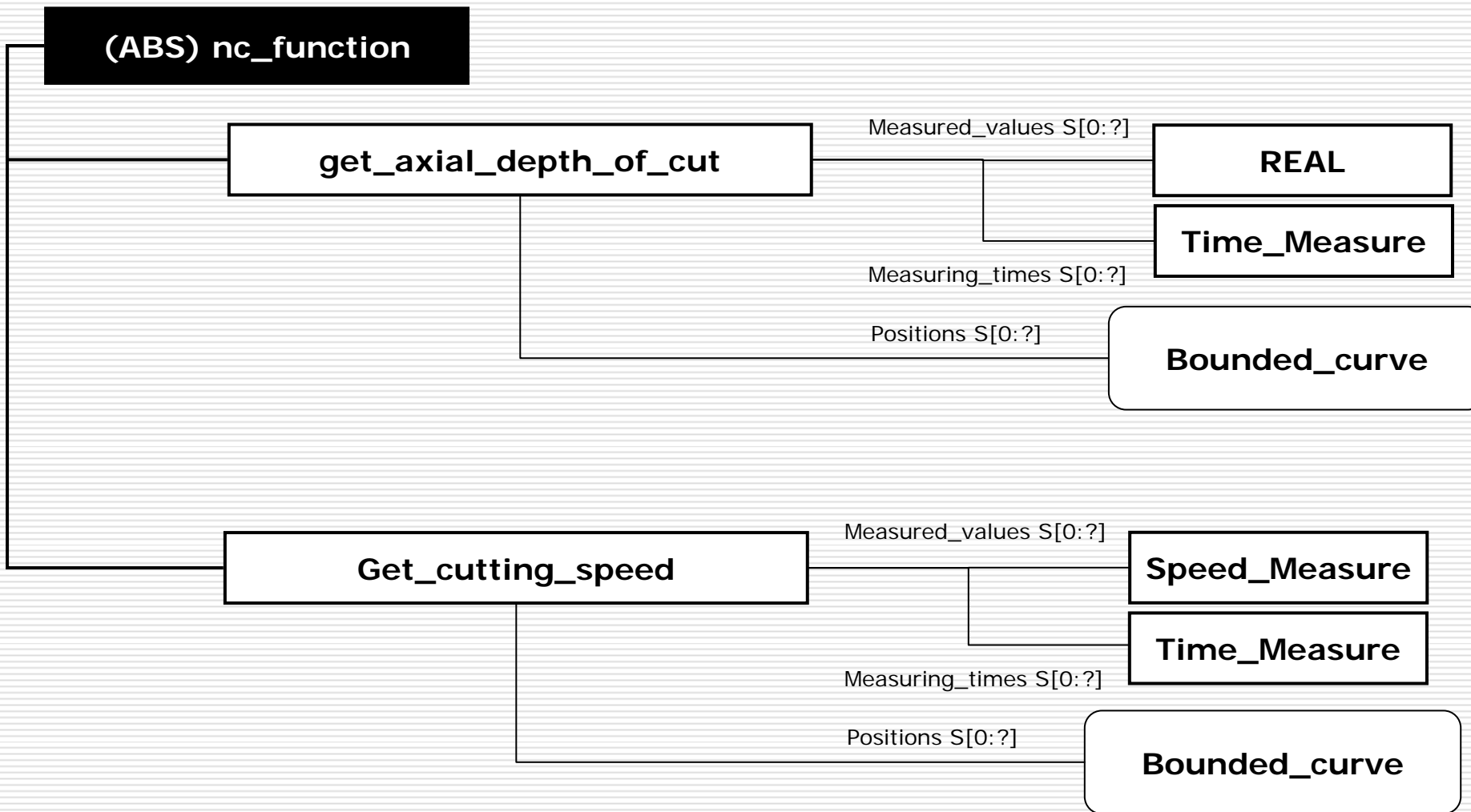
# Traceability nc\_functions. BLOCK II. Alternative Definition Samples

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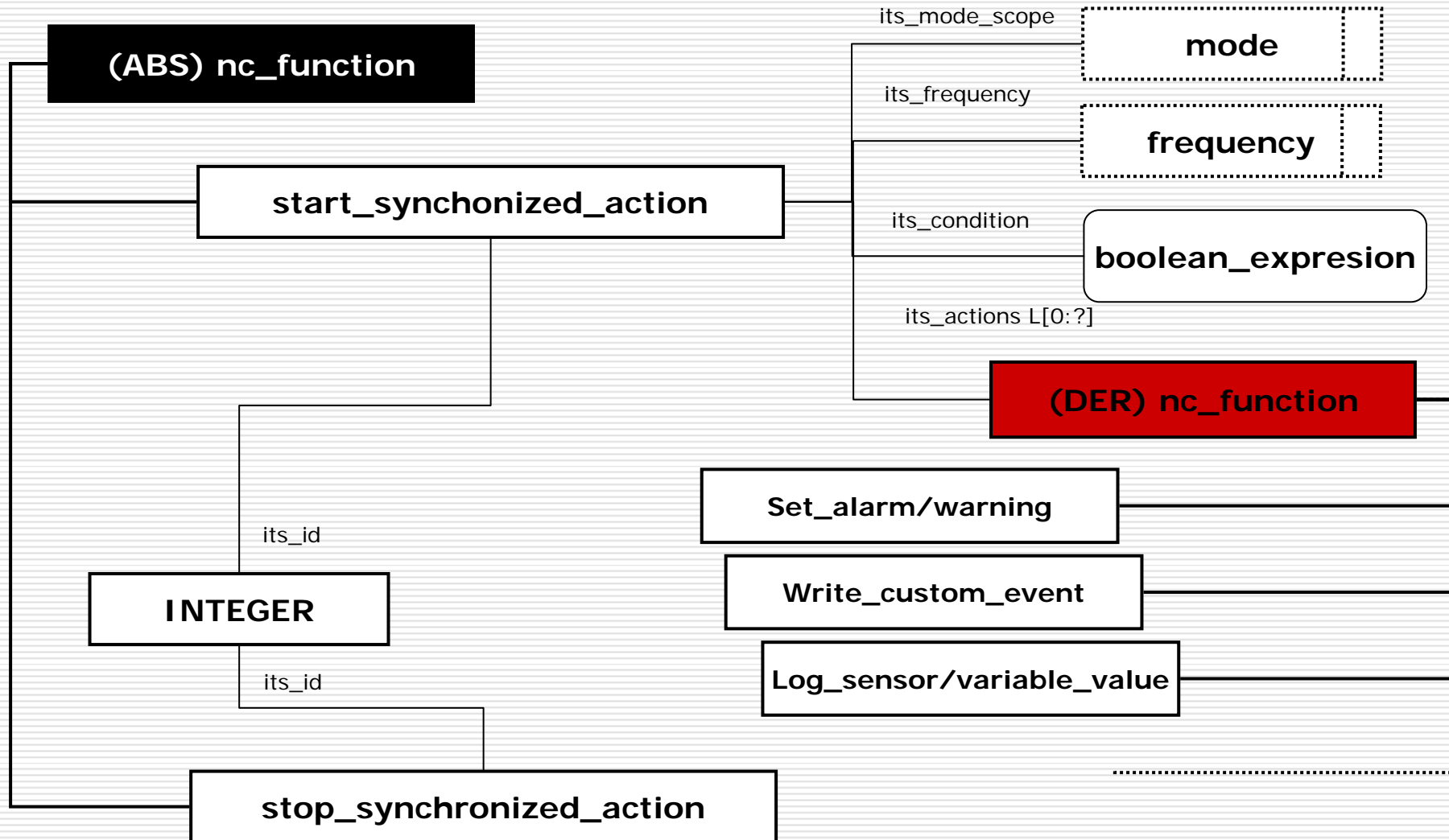


# Traceability nc\_functions. BLOCK II.

Alternative Definition Samples + Data place holder ??????



# Traceability nc\_functions. BLOCK III.





# How to record the data (I)

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□ **In Ap-238, 2 possible entry points:**

- 1. In the executable Structure as nc\_functions
- 2. As machining\_functions of workingstep operations

