Research Data C: GDF System Model and BSafeML Model

Additional figures produced in the case study (c.f. Research Data A, bsafemlPorject.eapx) that are not used in the paper (c.f. Section 5 of the paper) are provided in this research data. These figures are structured as follows:

* Figures C1–C5 provide additional views of the generic GDF concept model .
* Figures C6 shows the complete version of Figure 8 in the paper.
* C7–C10 show BSafeML diagrams for the ‘flammable gas build-up in disposal vaults’ hazard.
* C11–C13 show BSafeML diagrams for the ‘exposure to waste package during container maintenance’.
* C14–C16 show BSafeML diagrams for the ‘drift vehicle derailment due to earthquake’ hazard.
* C17 shows BSafeML diagrams for the ‘tunnel collapse’ hazard

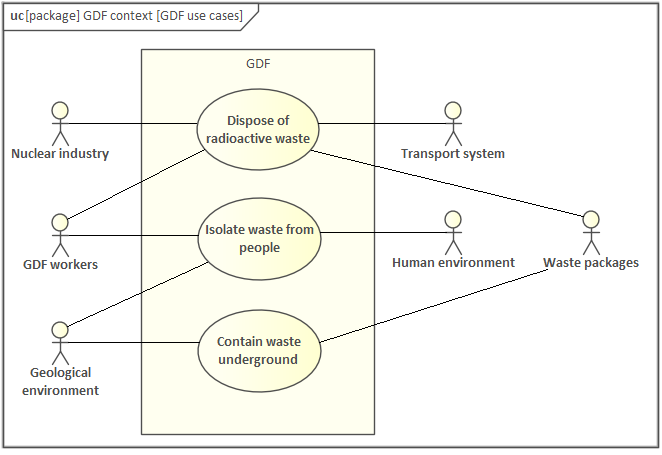


Figure C1: Generic GDF context and use cases.

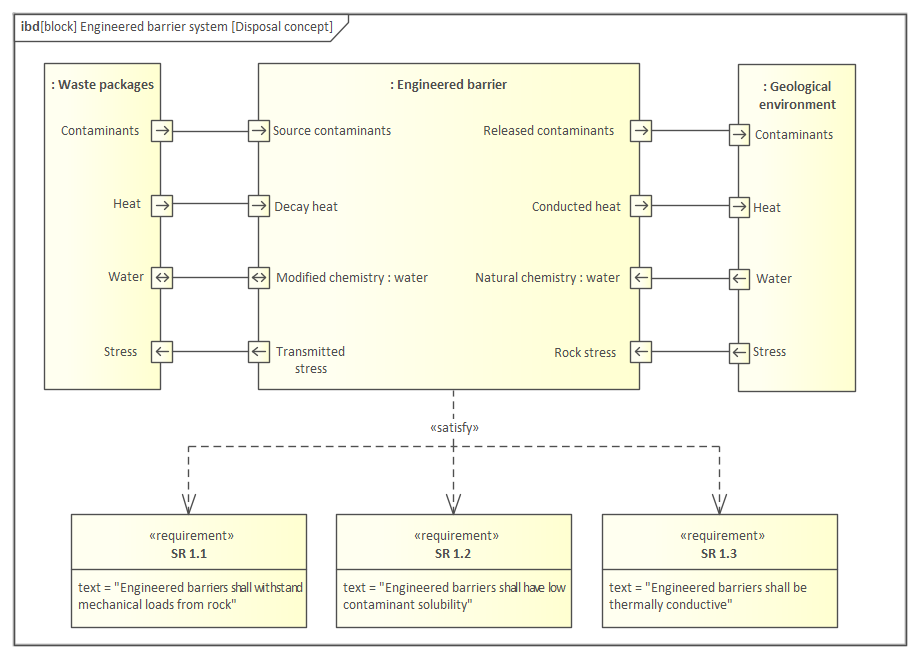


Figure C2: Structure and requirements of the engineered barrier system.

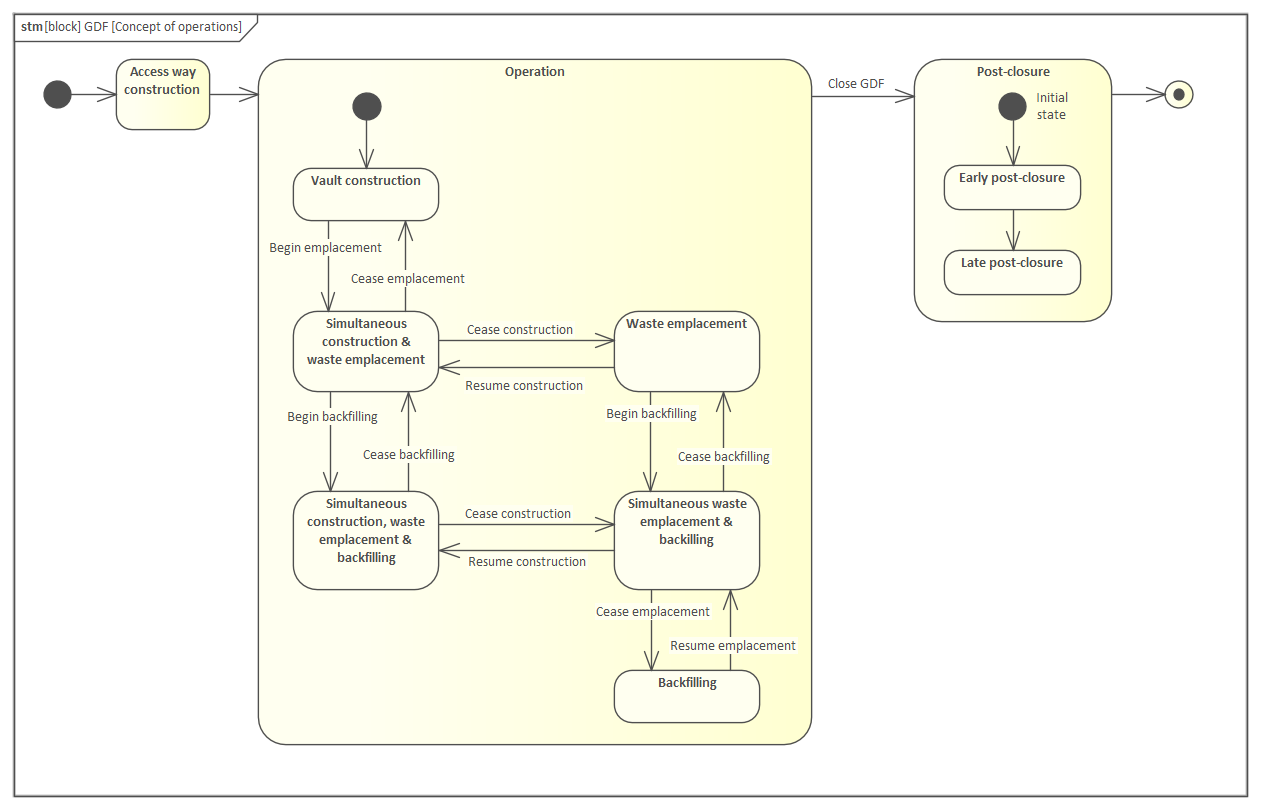


Figure C3: Generic GDF concept of operations.

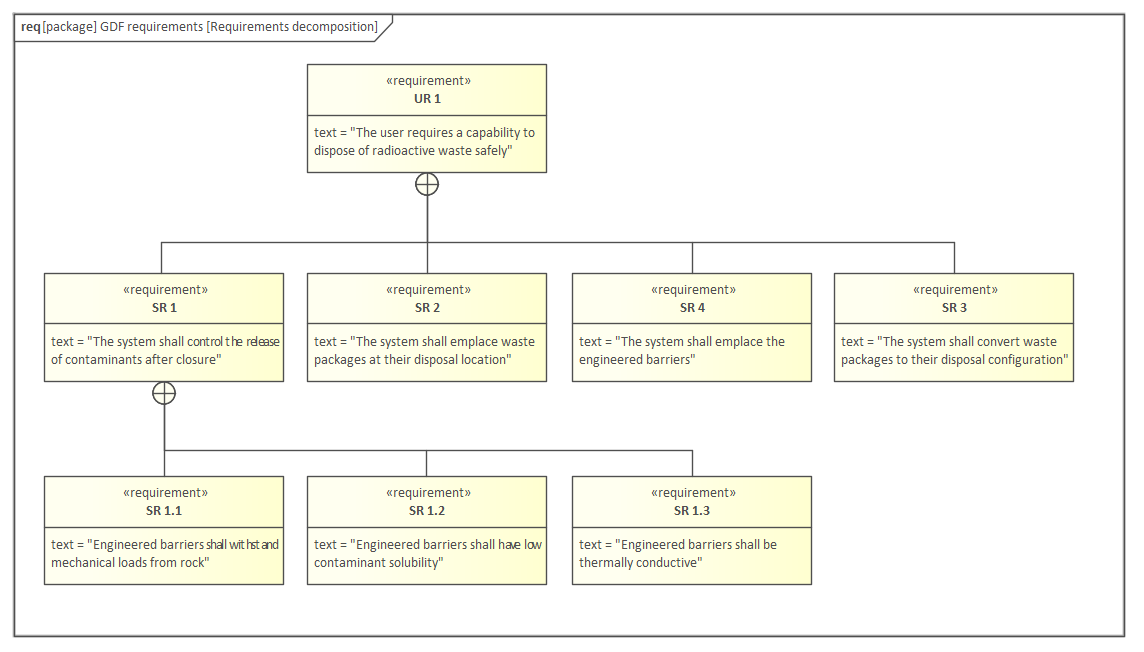


Figure C4: Generic GDF requirements.

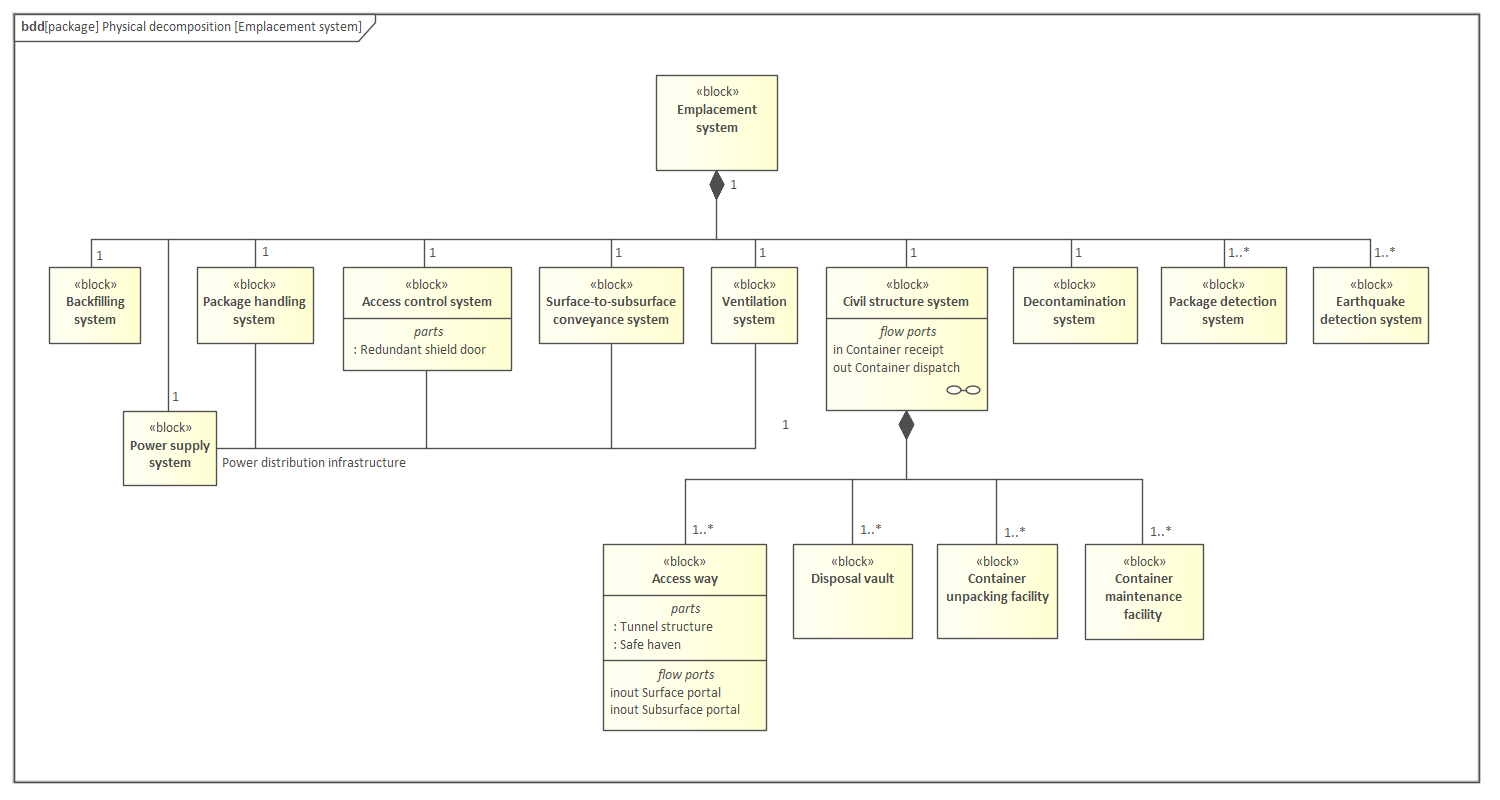


Figure C5: Physical breakdown of the generic emplacement system.

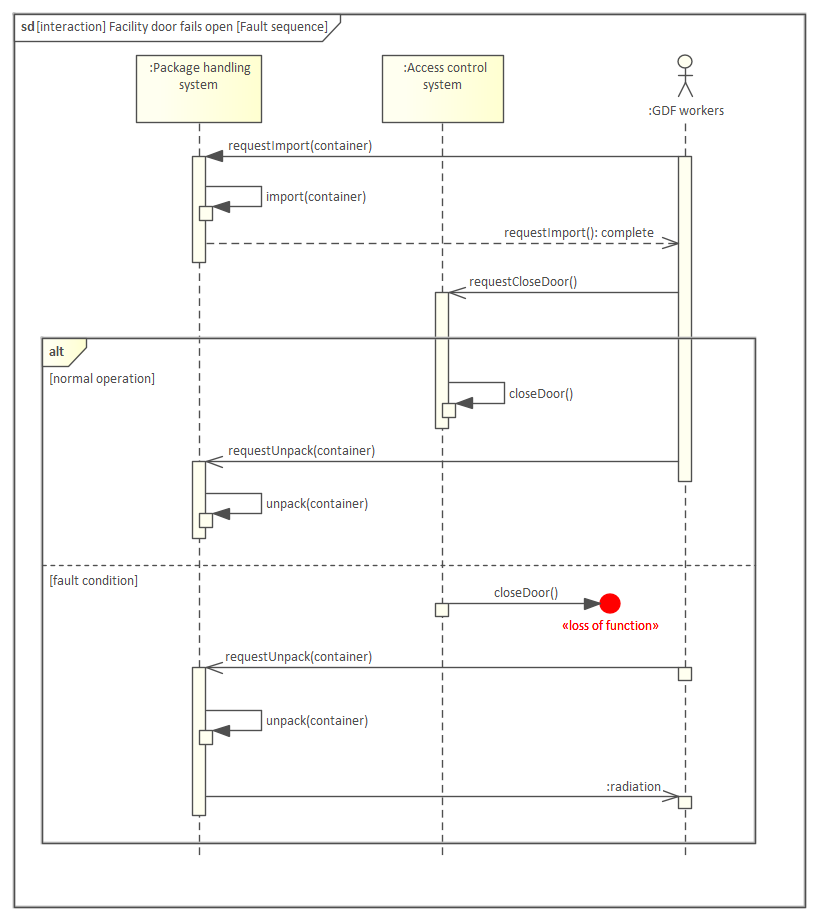


Figure C6: BSafeML fault sequence diagram showing a door failing open.

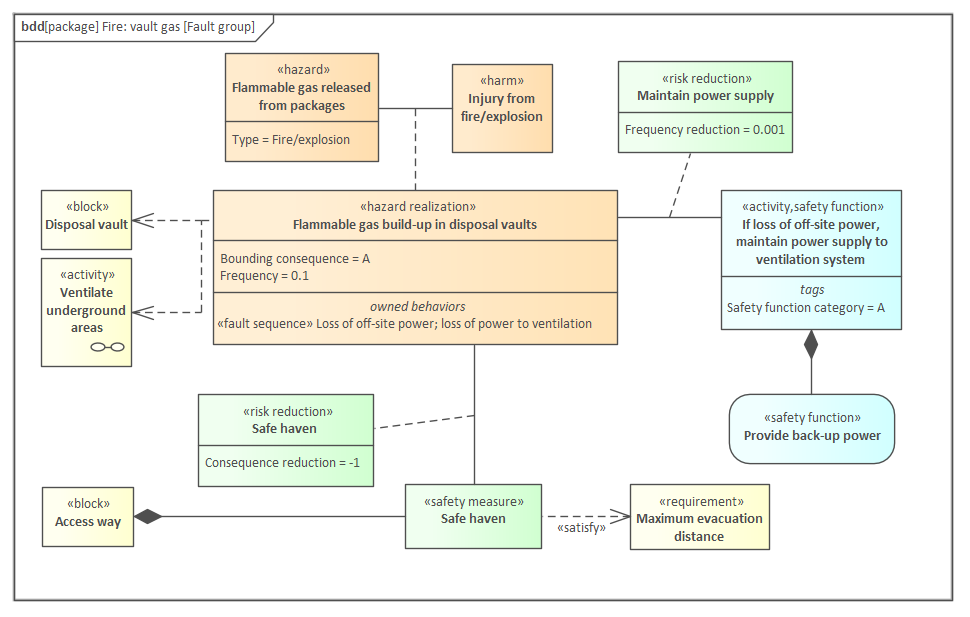


Figure C7: BSafeML model of flammable gas build-up in disposal vaults.

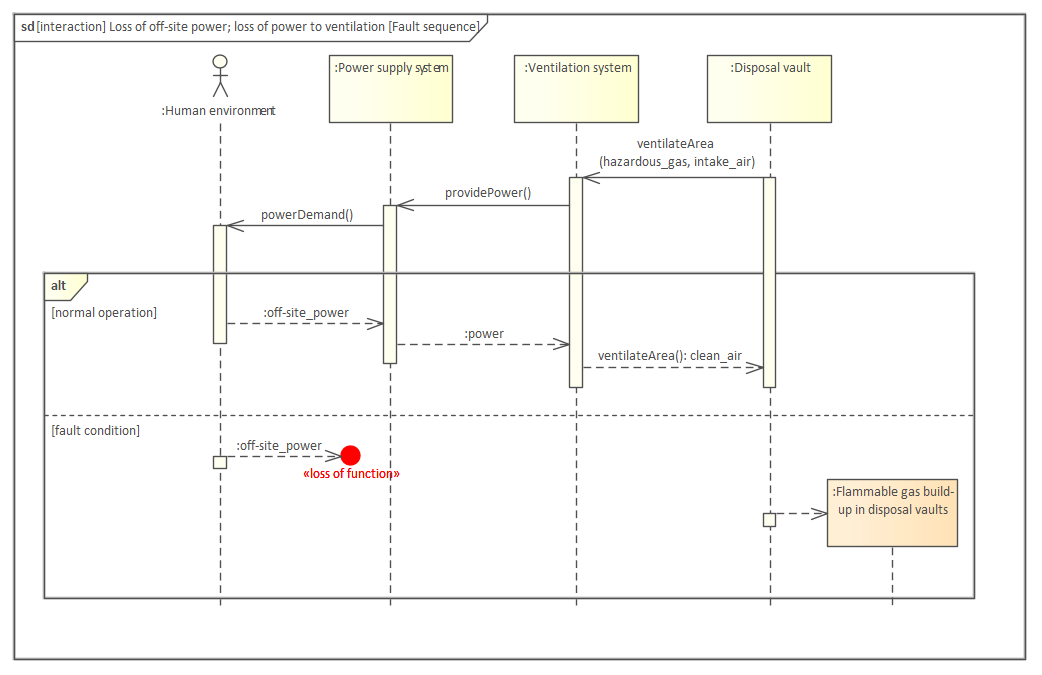


Figure C8: BSafeML fault sequence diagram for loss of off-site power.

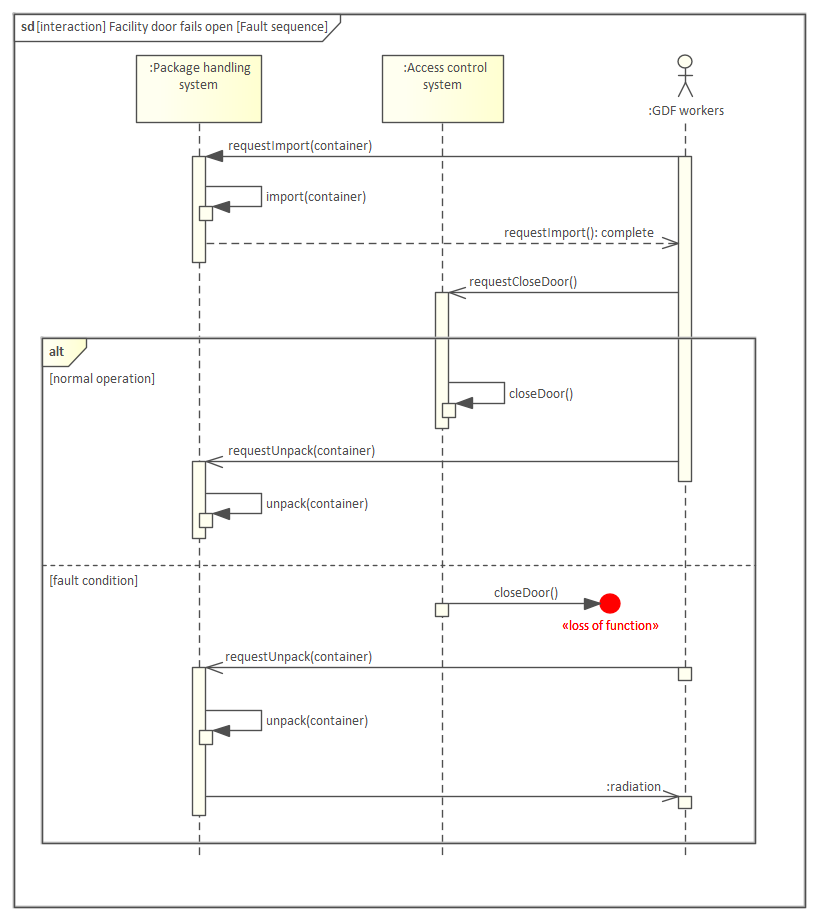


Figure C9: BSafeML fault sequence diagram showing a door failing open.

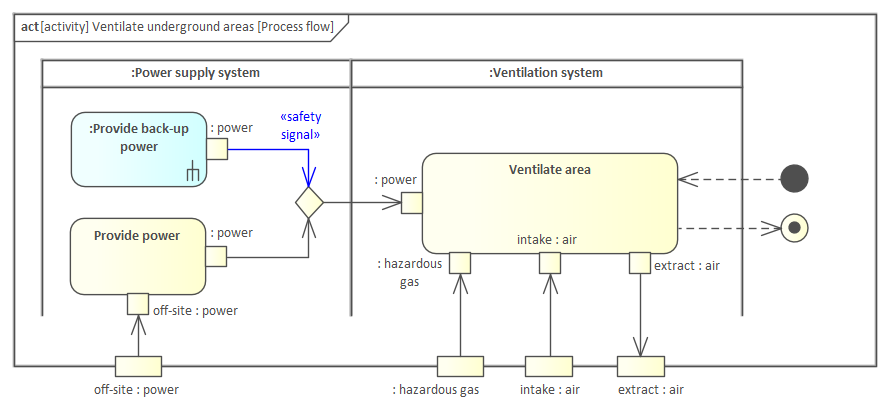


Figure C10: Safety functional behaviour associated with active ventilation.

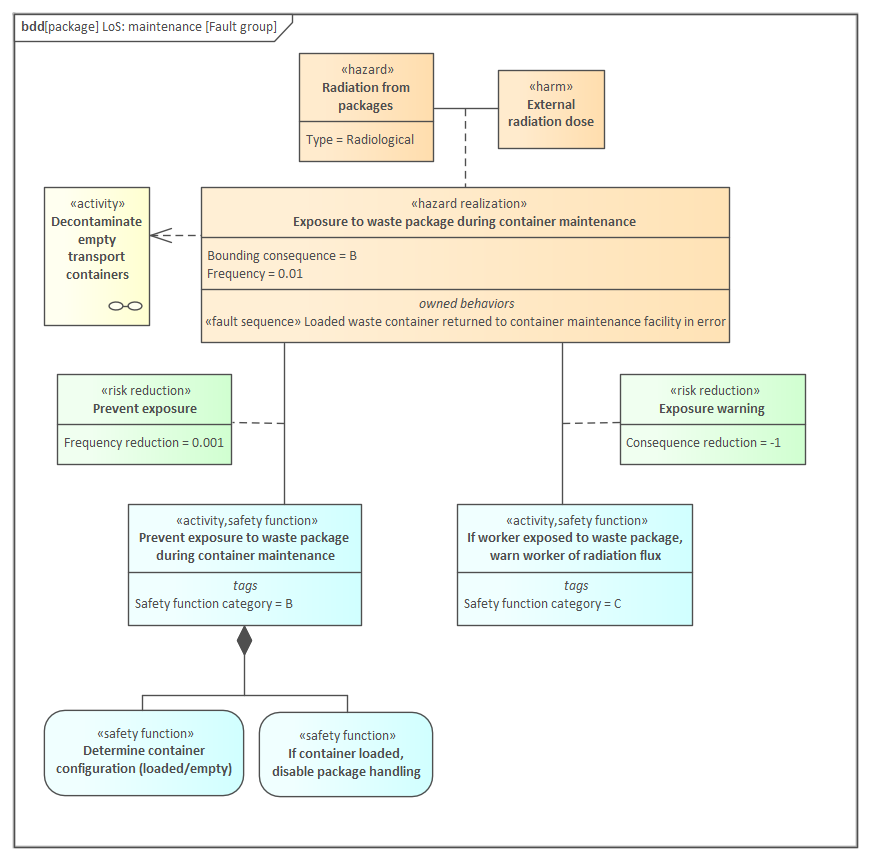


Figure C11: BSafeML model of exposure to waste package during container maintenance.

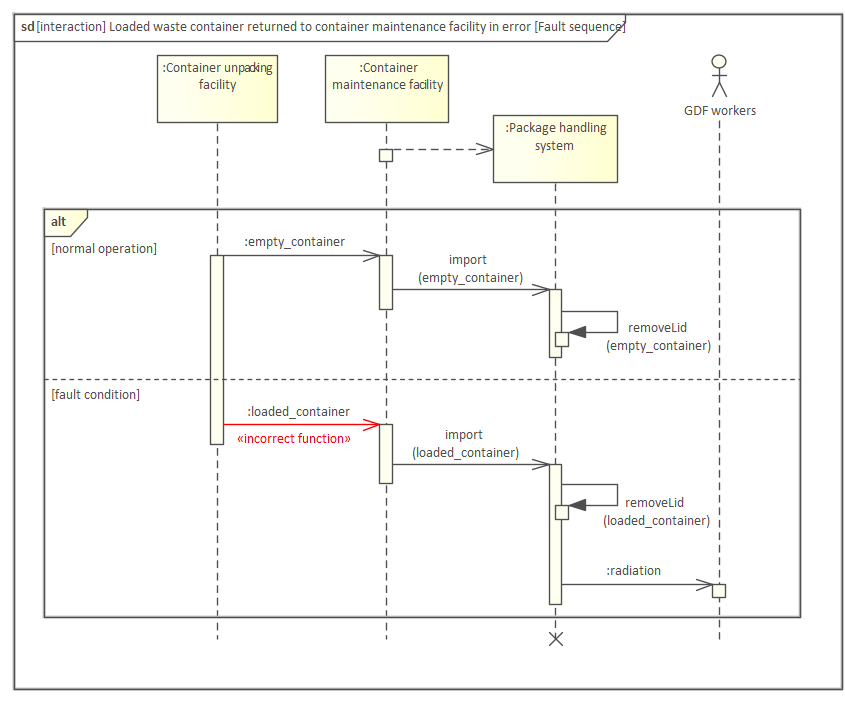


Figure C12: BSafeML fault sequence diagram showing erroneous return of a loaded container.

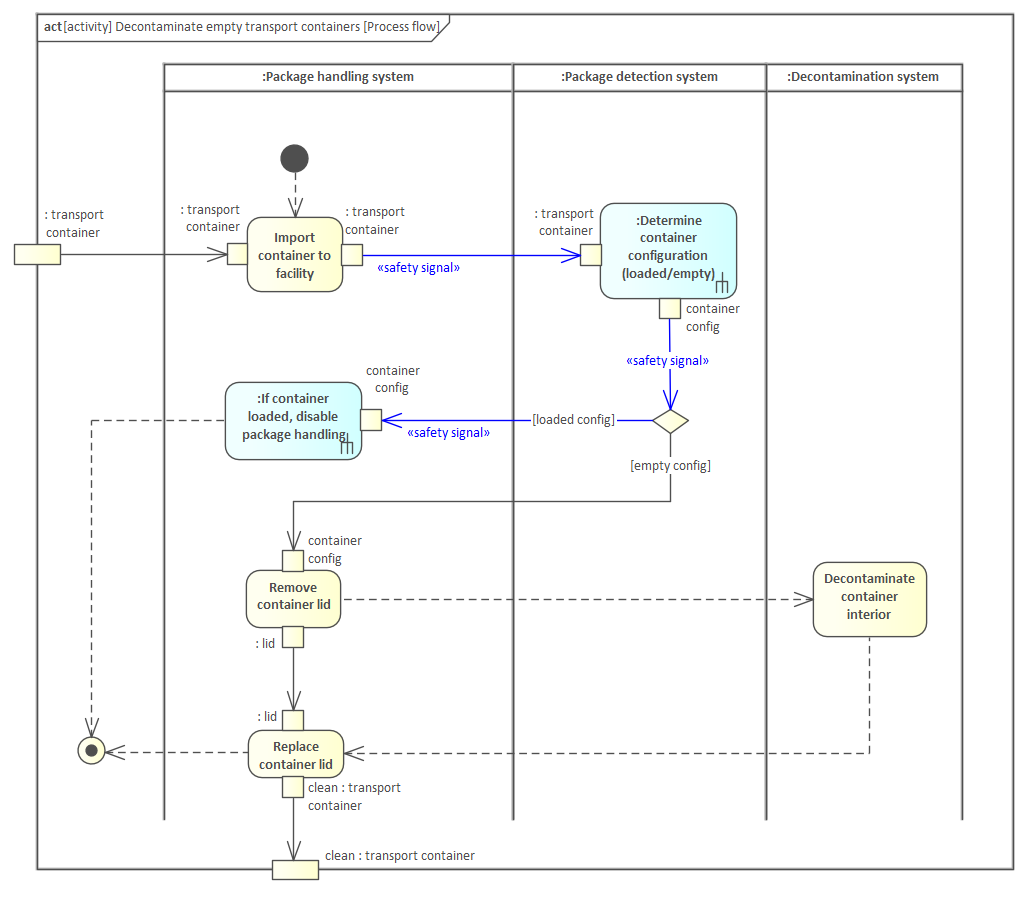


Figure C13: Safety functional behaviour associated with container maintenance operations.

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Figure C14: BSafeML model of drift vehicle derailment due to earthquake.

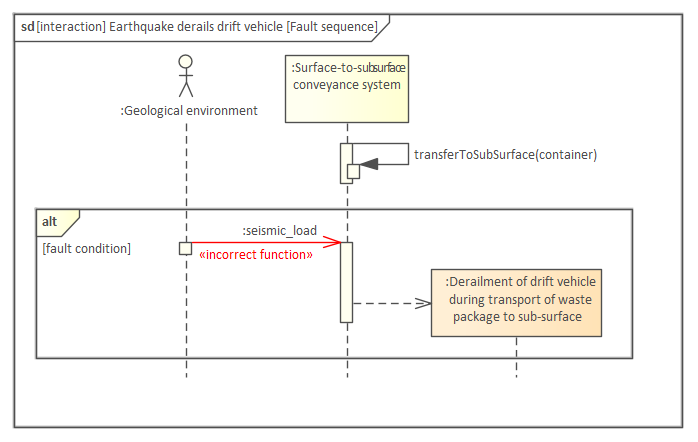


Figure C15: BSafeML fault sequence diagram showing an earthquake causing a vehicle derailment.

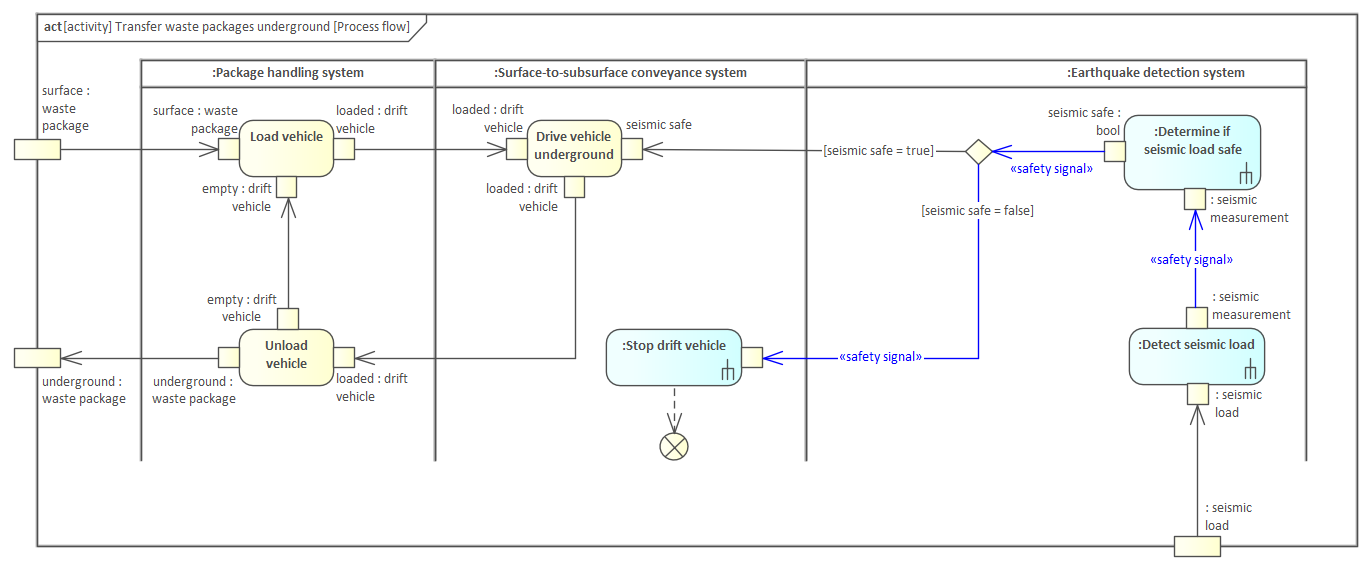


Figure C16: Safety functional behaviour associated with earthquake induced vehicle derailment.

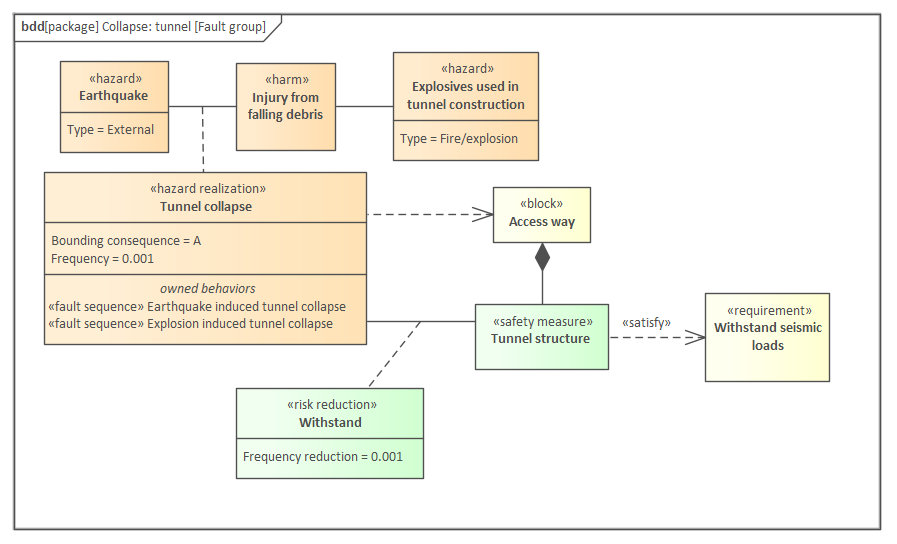


Figure C17: BSafeML model of tunnel collapse.