SYSML2 FTF

Proposed corrections to graphical notation for successions, messages, (succession) flows

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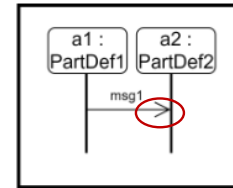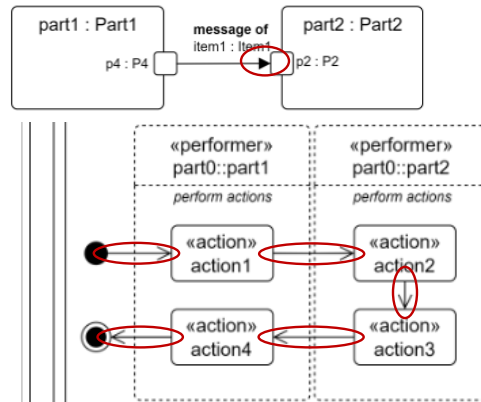- Inconsistencies in graphical notation for successions, messages and flows in general / action flow / sequence / interconnection views

- Some examples:

7.13.1 different labels, arrowheads

7.16.1 succession indistinguishable from message

8.2.3.9 GBNF for message, succession in sequence view

```
sq-message =
         sq-message-label
&sq-l-node ——————————————————→ &sq-l-node

sq-message-label = Identification | FlowPayloadFeatureMember

sq-succession =
&sq-l-node - - - - - - - - - - - - - - - - - →&sq-l-node
```

8.2.3.16 GBNF for succession in action flow view

```
succession =
              guard expression?
&action-flow-node ——————————————→ &action-flow-node
```

Correction & Improvement Needed

Overarching need is clear and unambiguous human-interpretable notation – consistent within and across views

Resolution should ensure:

- Distinguishable notation for succession, message, flow, succession flow

- Smooth transition from SysML v1

  E.g., succession with dashed line similar to control flow

- Same notation in action flow and sequence views

- Consistent notation for message or flow on connection (or interface) in interconnection view
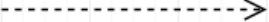
Proposed Resolution SYSML2-595 FTF
(basics by example)

2023-12-18
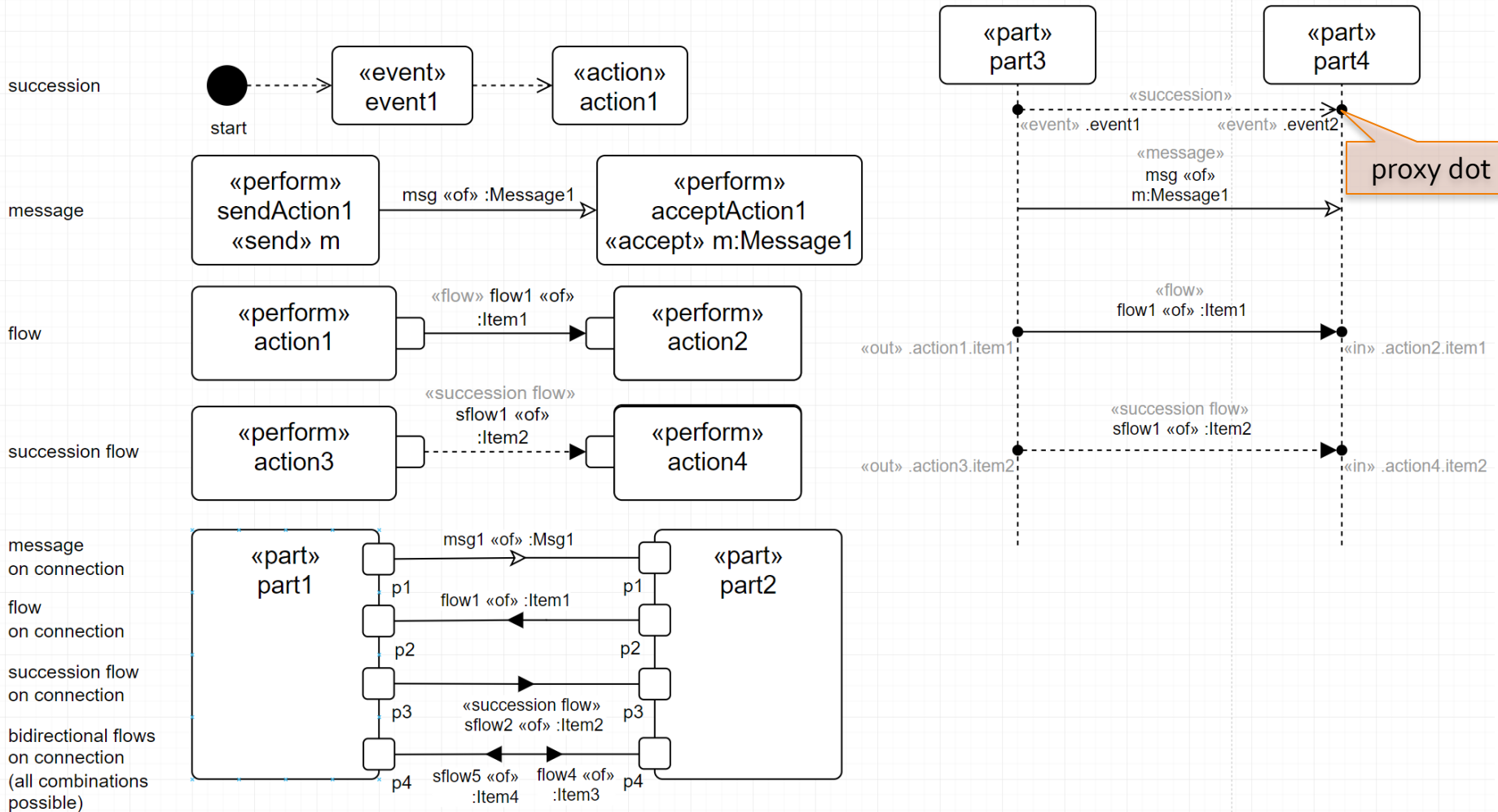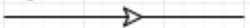
Legend (4 basic flow types)

1) --------------▷ «succession» with optional keyword

2) ──────────────▷ «message» with optional keyword, optional name, optional «of» payload

3) ──────────────► «flow» with optional keyword, optional name, optional «of» payload

4) --------------► «succession flow» with optional keyword, optional name, optional «of» payload

message, flow or succession flow on a connection

«message»
msgname «of» item:ItemDef
──────▷────── «message» on «connection» or «interface»
with optional keyword, optional flowname and optional «of» flow-item

«flow»
flowname «of» item:ItemDef
──────►────── «flow» on «connection» or «interface»
with optional keyword, optional flowname and optional «of» flow-item

«succession flow»
flowname «of» item:ItemDef
──────►────── «succession flow» on «connection» or «interface»
with optional keyword, optional flowname and optional «of» flow-item

Practical Example

«perform action»
startVehicle :> startVehicle1

«part»
driver : Driver

«part»
vehicle : Vehicle

swimlane

succession

«event»
driverReady

«event»
doorClosed

start

«perform»
turnVehicleOn

«succession flow»
flow1 «of»
:IgnitionCmd

«perform»
startEngine

succession flow

flow

es : EngineStatus

«flow» flow2

es : EngineStatus

«perform»
trigger2
«accept»
es:EngineStatus

done

msg2 «of»
:EngineStatus

«perform»
sendStatus
«send» es

message