



# MODEM -> NAF

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# NAF Meta-Model



- M3 & NMM identical (though versions sometimes lag
  - current NMM one minor revision behind)
- Meta-Model based on UML Meta-Model
  - ...which gives you a UML Profile
  - ...now adopted by OMG UPDM (90% the same as M3/NMM)
- Proposal is to replace M3/NMM with a meta-model based on IDEAS Foundation
  - i.e. MODEM



# MODEM



- The new meta-model for MODAF
- Re-engineered from M3/NMM
- Based on IDEAS Foundation (as is DM2)
- Developed by Swedish Armed Forces and UK MOD
- First step towards a unified framework





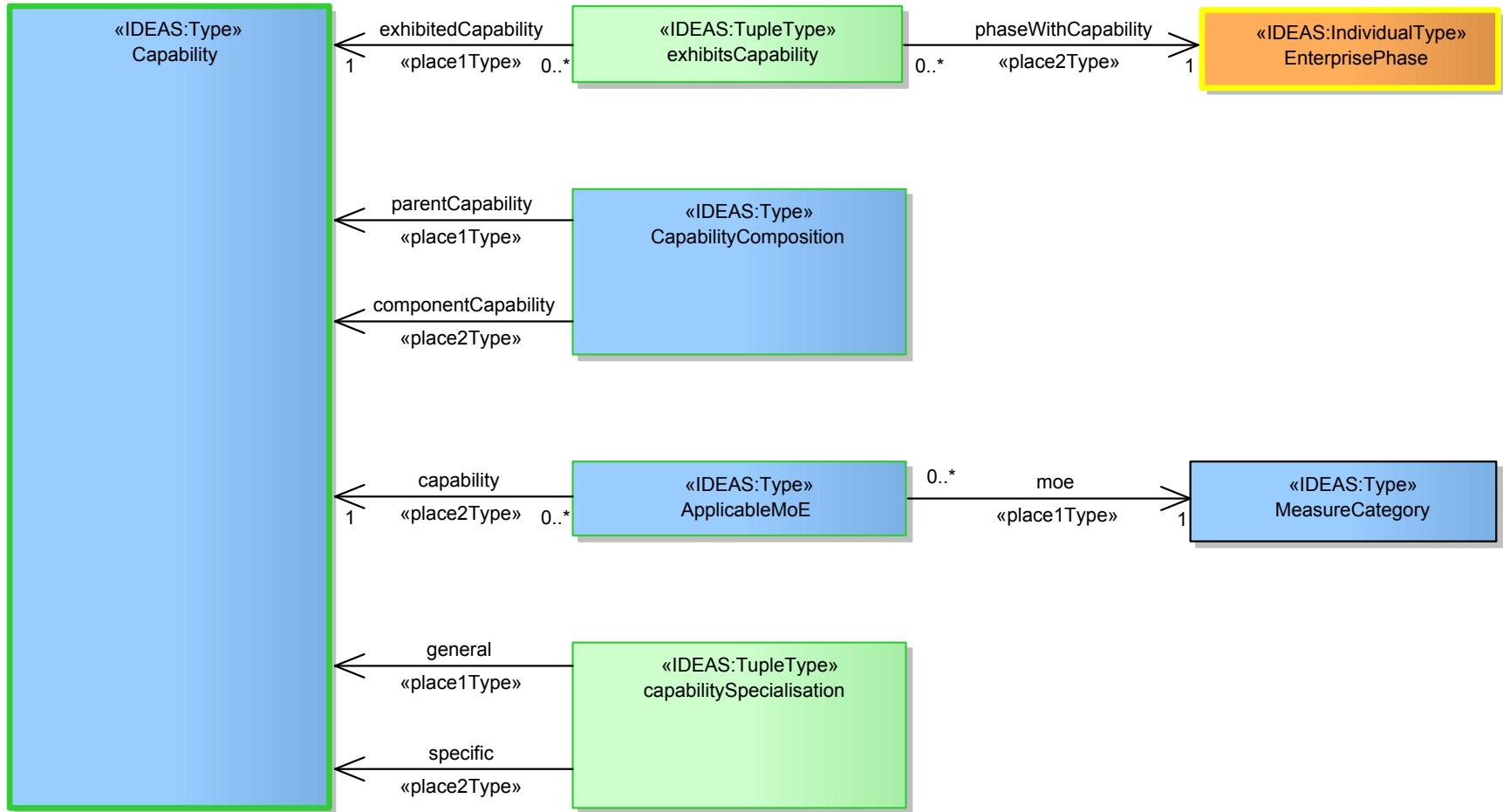
# Why MODEM ?



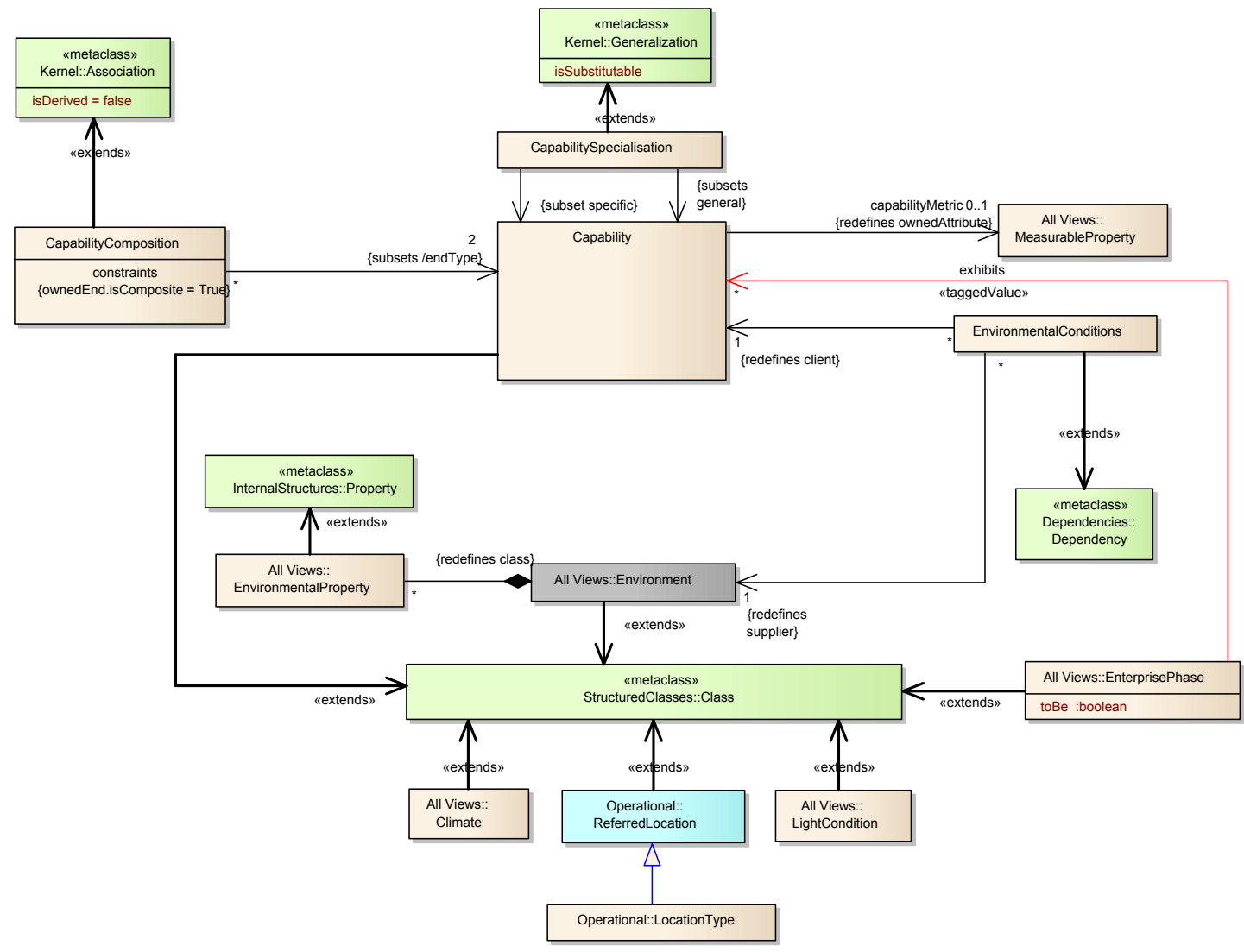
- M3 / NMM based on UML Meta-Model
  - i.e. a UML profile
- This is great for UML tools
- Not so easy to implement in non-UML tools
  - Most MODAF/NAF tools are not UML
- A lot of “UML baggage” that really just wasn’t needed for MODAF or NAF
- Now we have UPDM for the UML tool vendors, there is no need for NMM/M3 to be a profile



# StV-1 / NCV-1 in MODEM

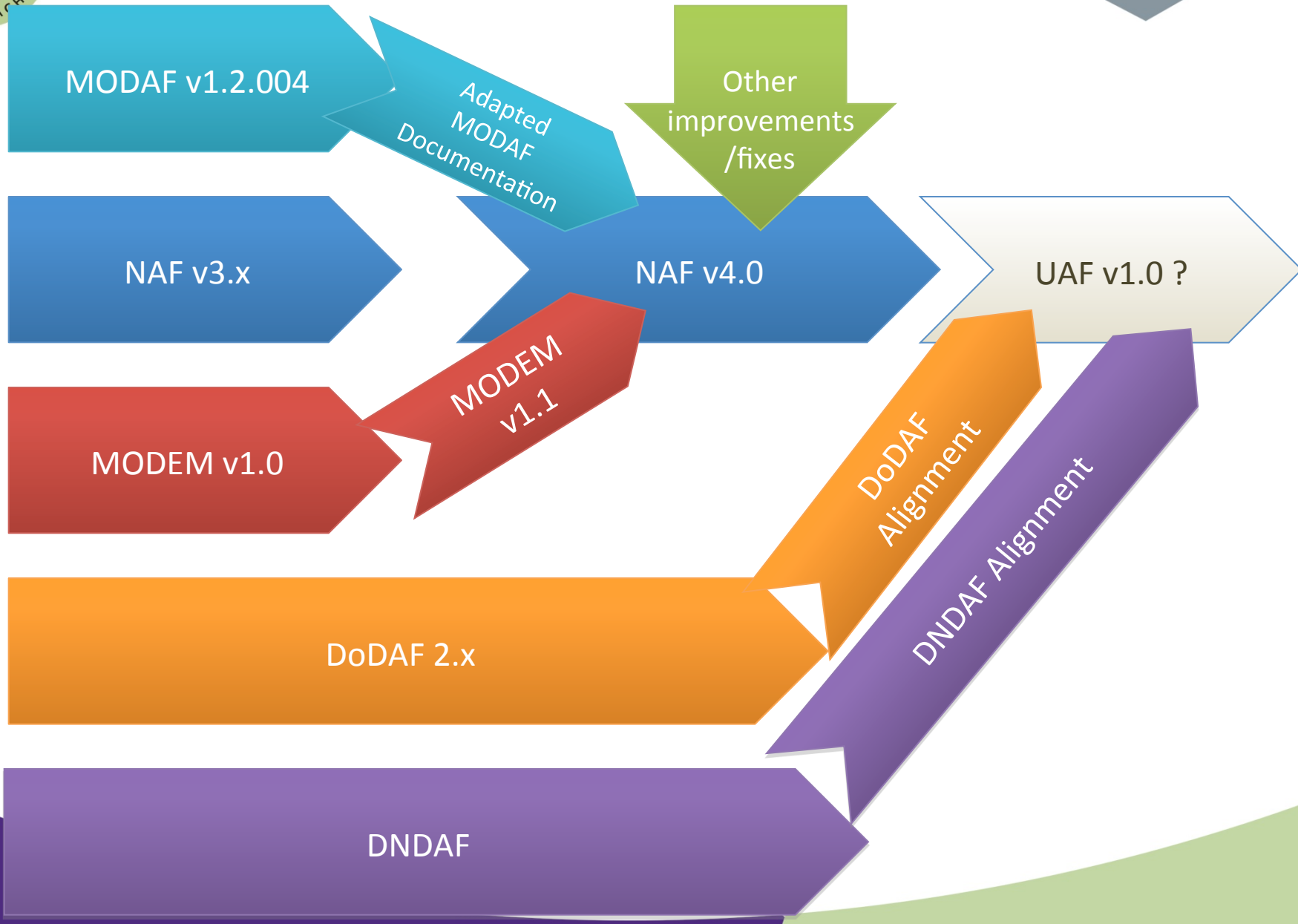


# StV-1 / NCV-1 in M3 / NMM





# What We're Proposing





# Meta-Model



- MODEM was a re-engineering of NMM/M3
  - UML meta-model dependencies removed
  - Re-engineer NMM/M3 using BORO method and IDEAS Foundation
  - Semantically common with NMM/M3
  - Structurally different
- Tool Compatibility
  - Few tools actually implemented NMM/M3 directly
  - As they interpreted the NMM/M3 semantics into their internal meta-models, MODEM should present few issues





# Approach



- Audit MODEM against NAF
  - No meta-model issues – MODEM is based on M3/NMM
  - See later presentation
- Take MODEM and extract the meta-model elements required for each NAF view
  - This is currently on hold until we know whether the grid approach will be adopted (see slides later today)



# Other Requirements



- SWE have analysed the CAN security views
  - May require minor additions to MODEM
  - Probably covered by existing views
  - See later presentation
- Human Factors
  - UK MOD has met with team responsible on several occasions
  - *All* agree that no new views required
  - *All* agree than no meta-model changes required
  - Would make a useful methodology document



# Publication



- Goal is tighter integration with view documentation
  - Ensures consistency
  - Helps implementation
  - Meta-model extract in each view section
- Web based
  - Using SVG if possible
  - Enabling future linking into diagrams
- Also provide complete meta-model
- Good to go !
  - Just need decision on views