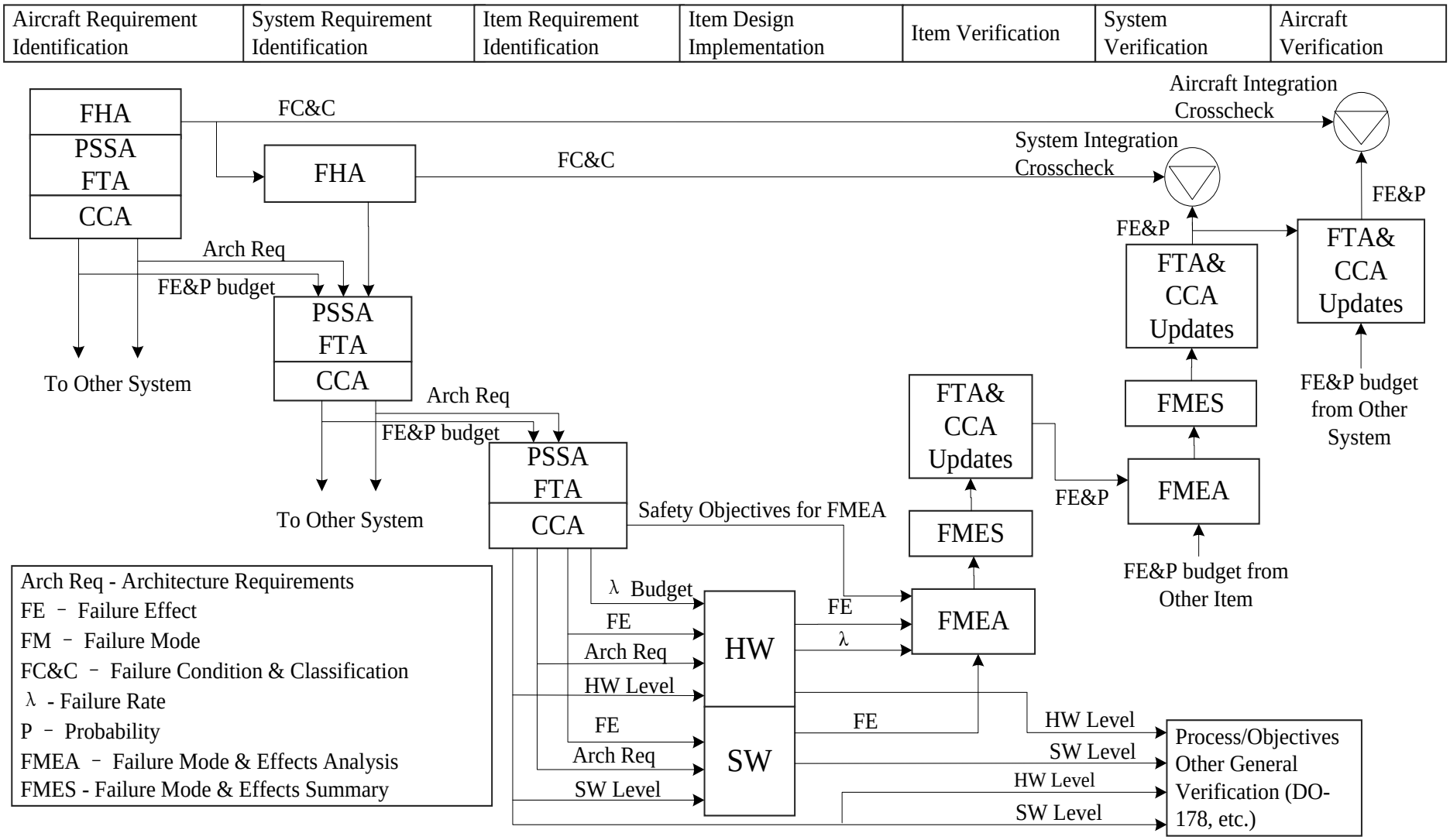
Optimization of the System Safety Assessment Process & Software Reliability Framework

Yunsheng(Johnson) Wang & Richard Hackett

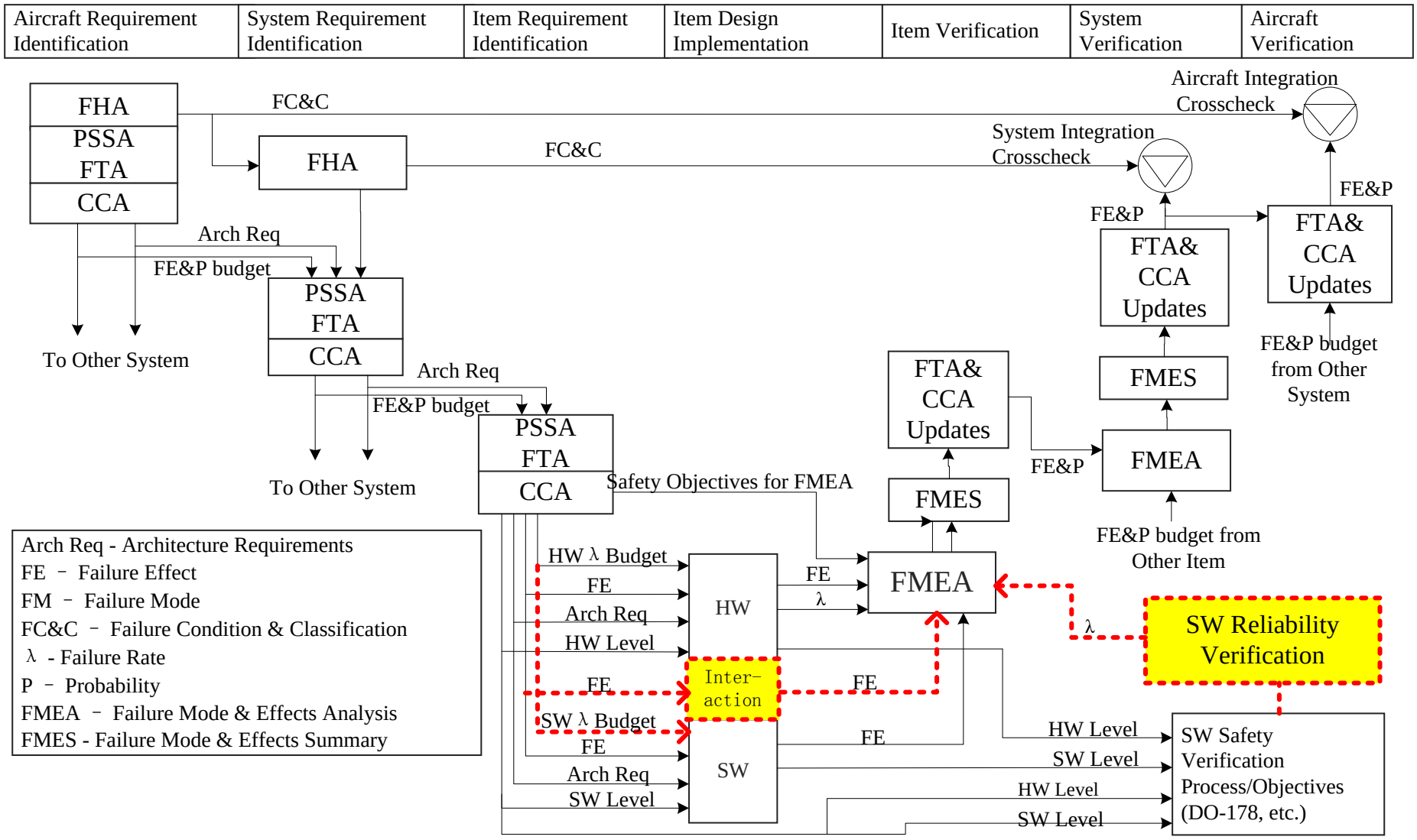
Existing System Safety Assessment ARP4761



Since Software contributes to system failure as Hardware does, so the following "additional" factors should be considered:

- Failure Rate budget for software components in Avionics
- Software Failure Rate quantitative analysis and verification
- software Failure Rate feedback to item/system level FMEA
- Failure mode and impacts of Software/Hardware interactions
- Failure effect of Software/Hardware interactions provided to item/system level FMEA

Optimized System Safety Assessment



Software reliability framework for Avionics

- system safety inputs to software
- airborne software development processes and objectives for airworthiness consideration
- software reliability objectives derived from common software quality
- Avionics technical specific software requirements

Qualitative goals + Quantitative objectives