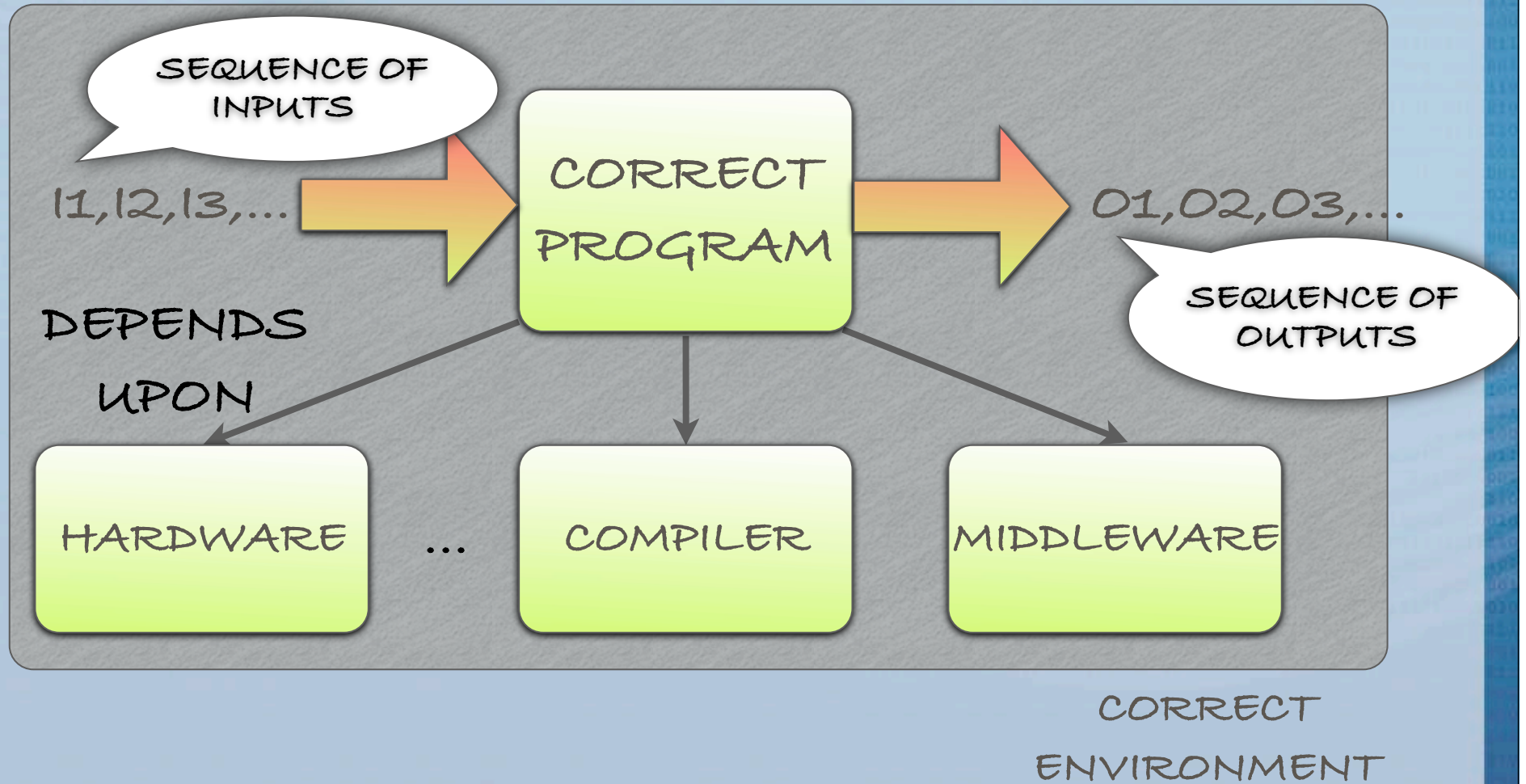


Scrutinizer

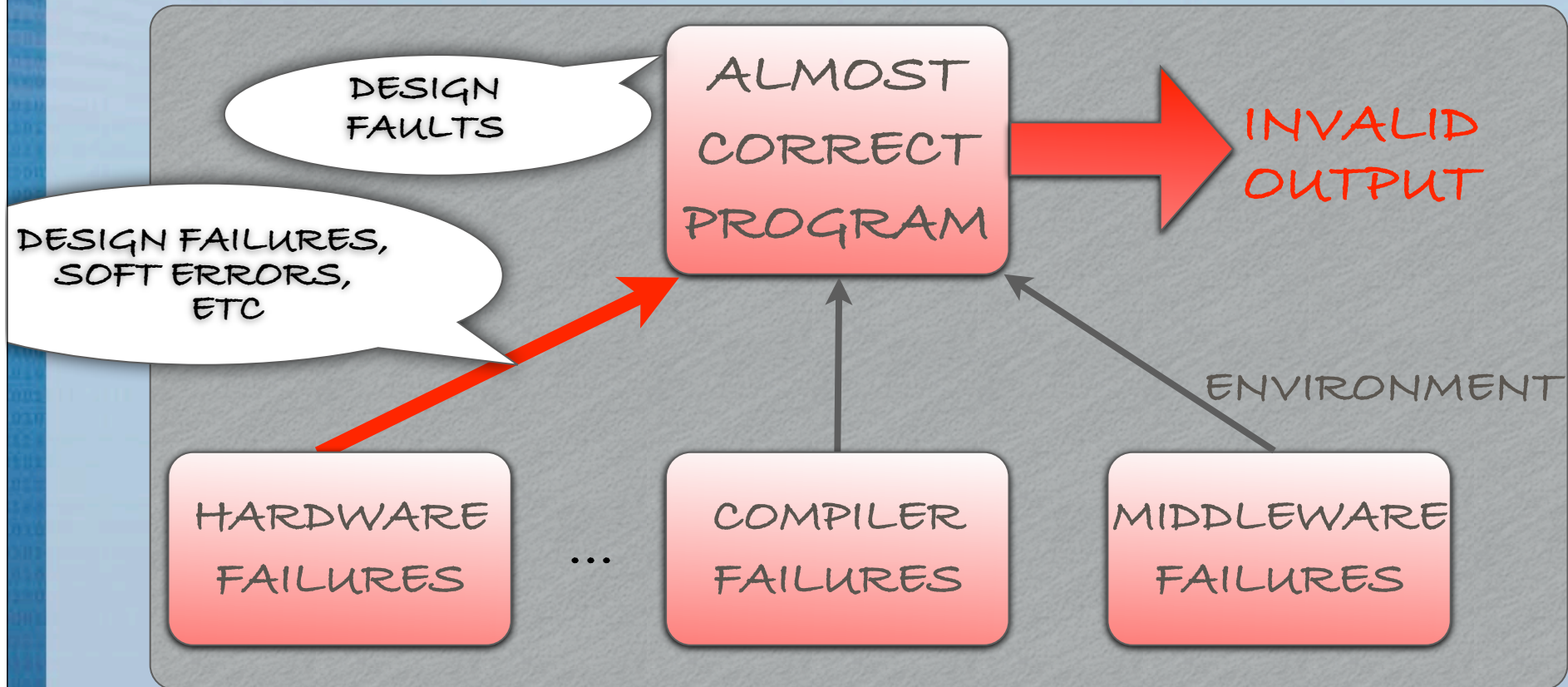
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MOTIVATION

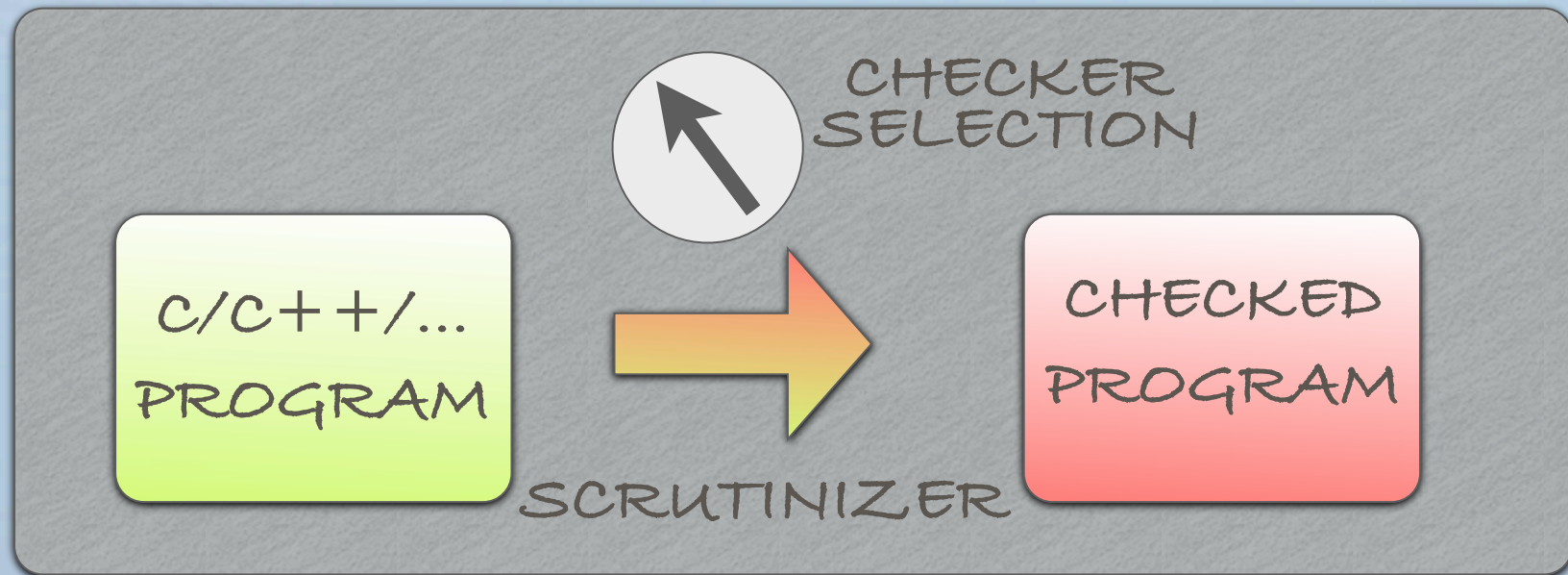


FAILURES!



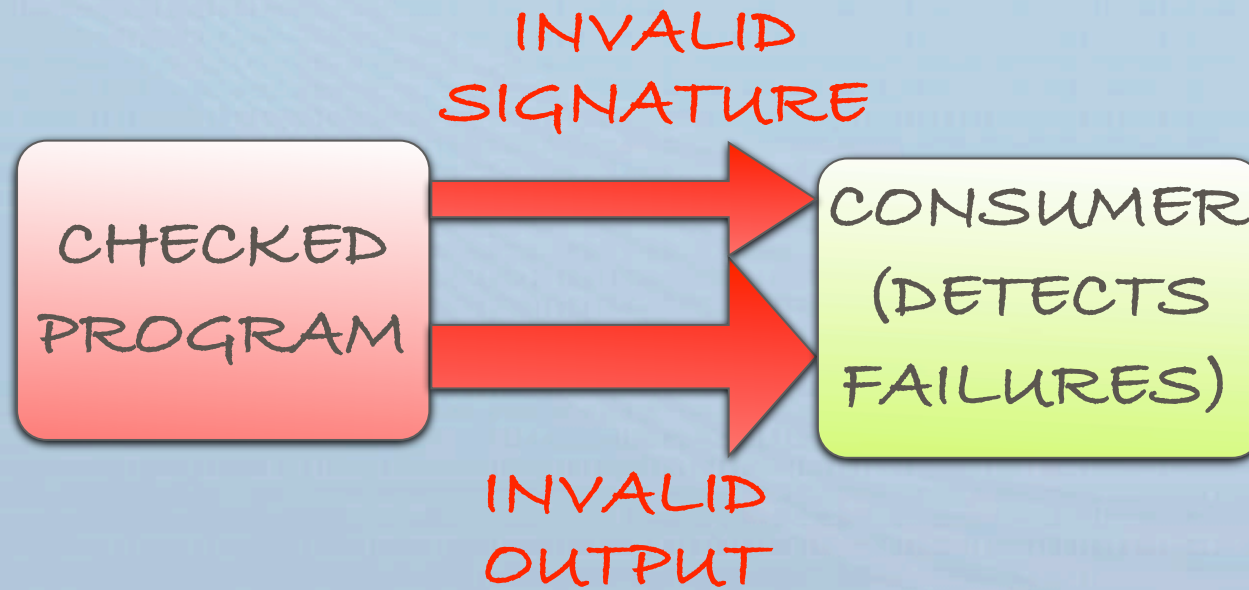
HOW TO DEAL WITH THESE FAILURES?

COMPILER-BASED APPROACH

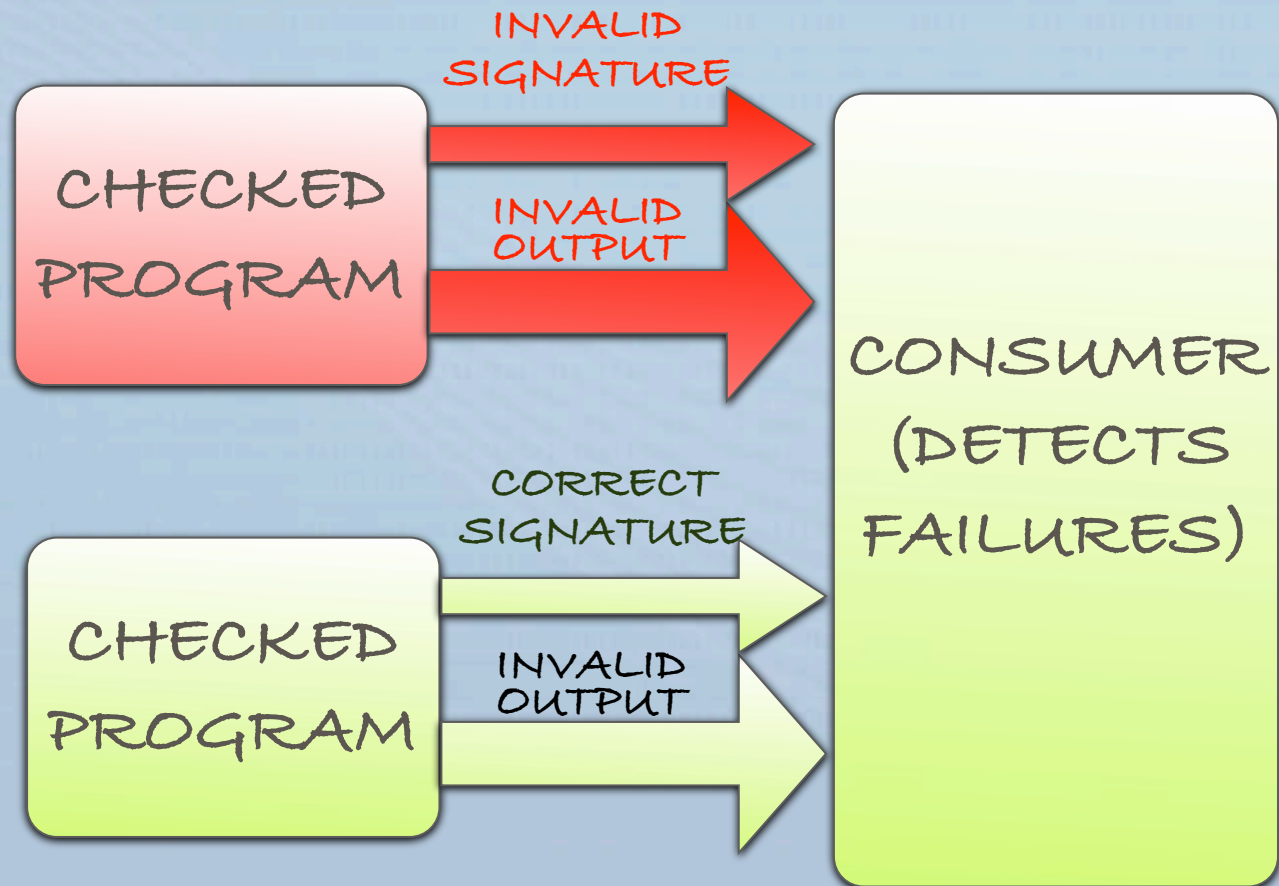


GOAL: MAKE FAILURES DETECTABLE!

APPROACH



WITH REDUNDANCY

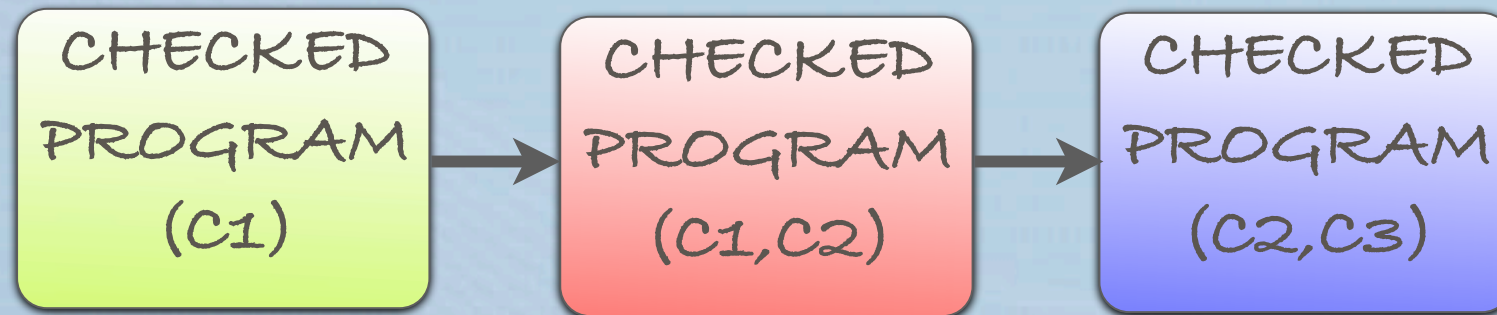


MIXED-MODE SYSTEMS



COMPUTER

FAILURE DIAGNOSIS / ADAPTATION



(CHECK
KERS)

RUNTIME ADAPTATION

CONCLUSION

- DIFFERENT CHECKERS SUPPORTED
 - AN, AN+B, AN+B+D
 - SWIFT VARIANTS
 - VARIOUS SOFTWARE BUG CHECKERS
 - SOME ARE AUTOMATICALLY MASKED
- STARTING OCTOBER
 - NEW PROJECT TO PUSH THIS FURTHER
- MAYBE: HARDWARE SUPPORT FOR CHECKED PROGRAMS

REFERENCES

- FETZER ET AL: "AN-ENCODING COMPILER: BUILDING SAFETY-CRITICAL SYSTEMS WITH COMMODITY HARDWARE", SAFECOMP 2009
- SCHIFFEL, ET AL.: "AN+B, AN+B+DMEM ENCODING", SAFECOMP 2010