

# XERUM

ASD Case Notes:  
Costs and benefits of Applying Formal Methods to  
Industrial Control Software

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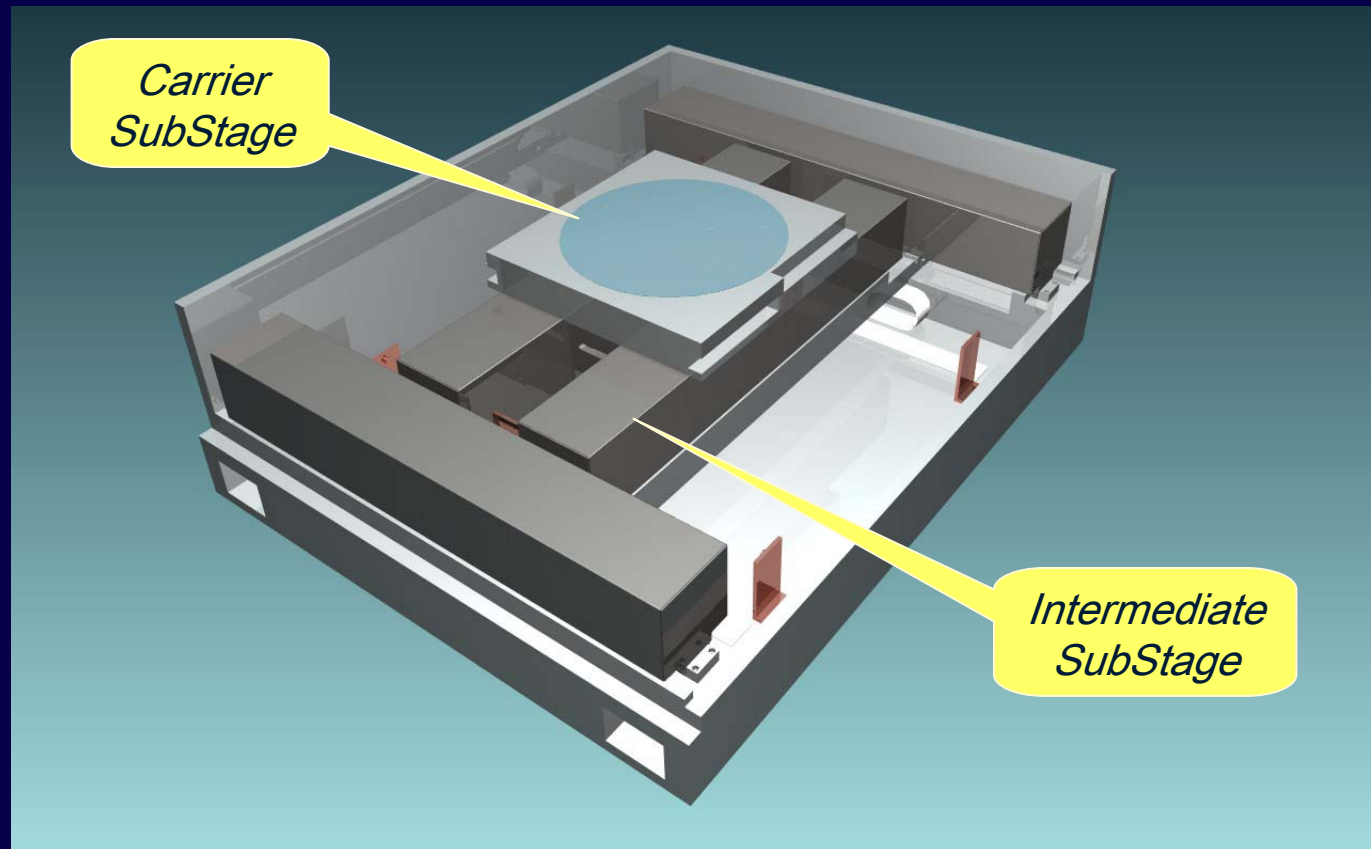
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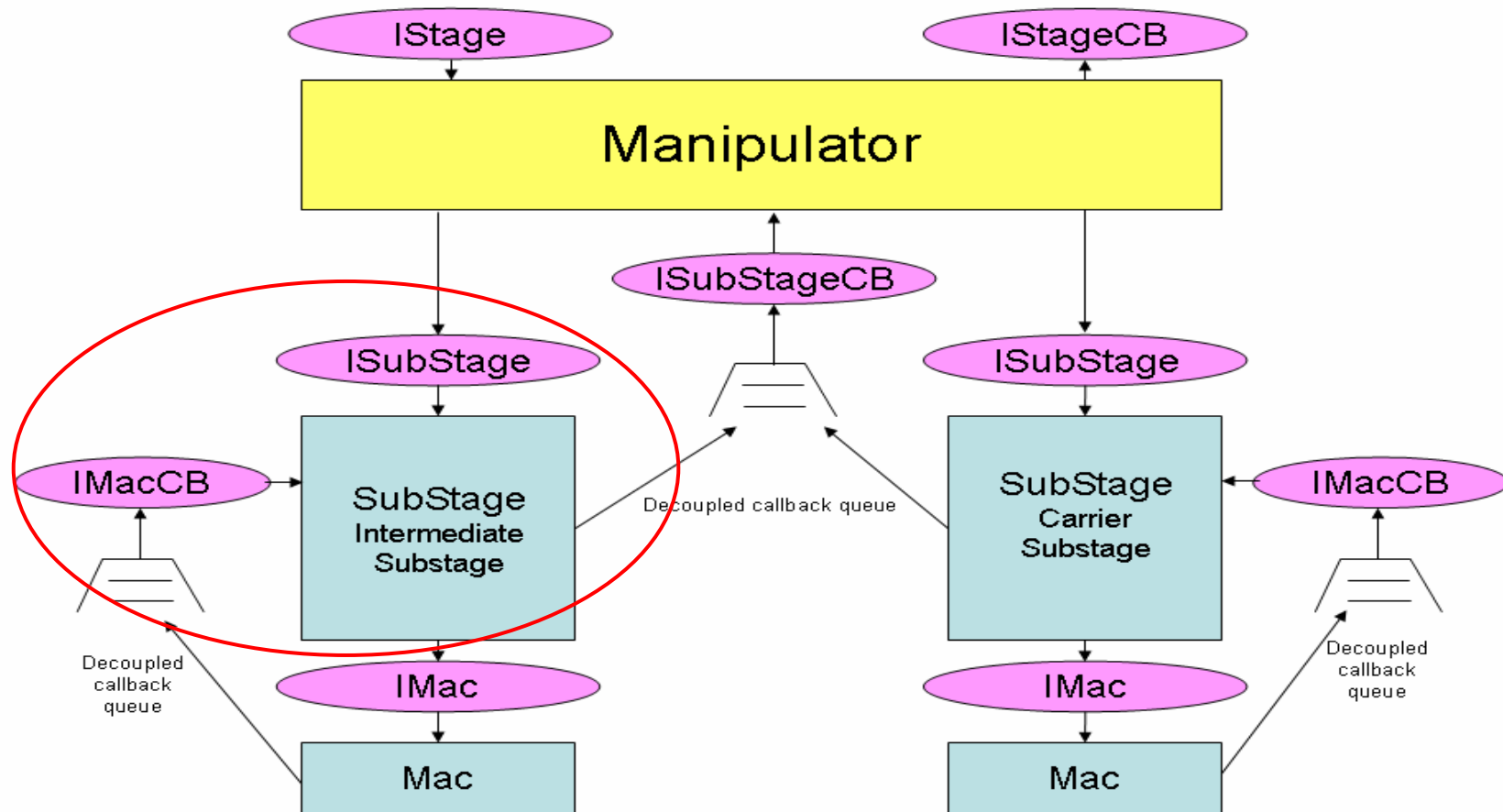
- ▣ Applying ASD to the MagLev Software

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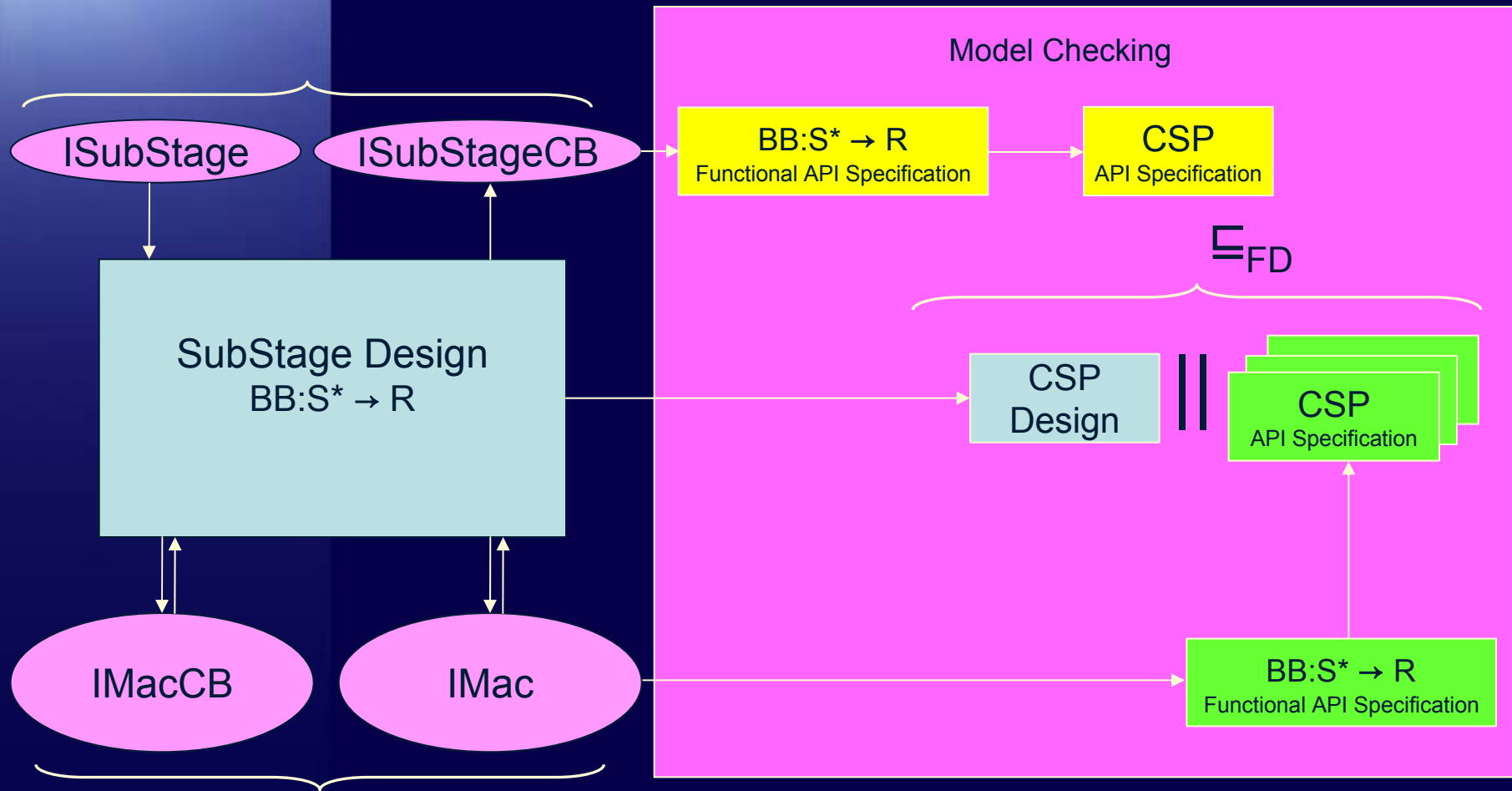
# The MagLev Stage



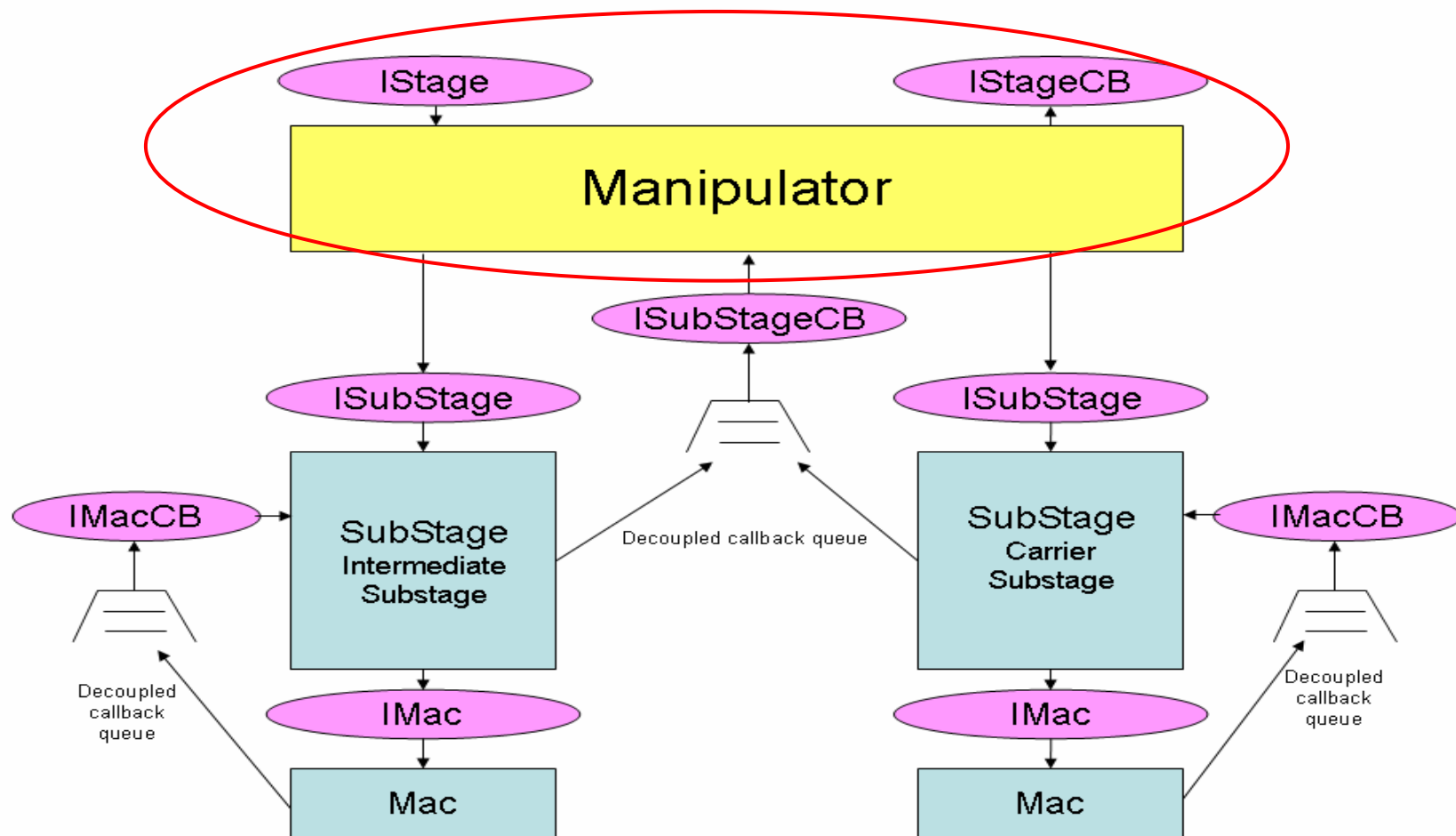
# The MagLev Software



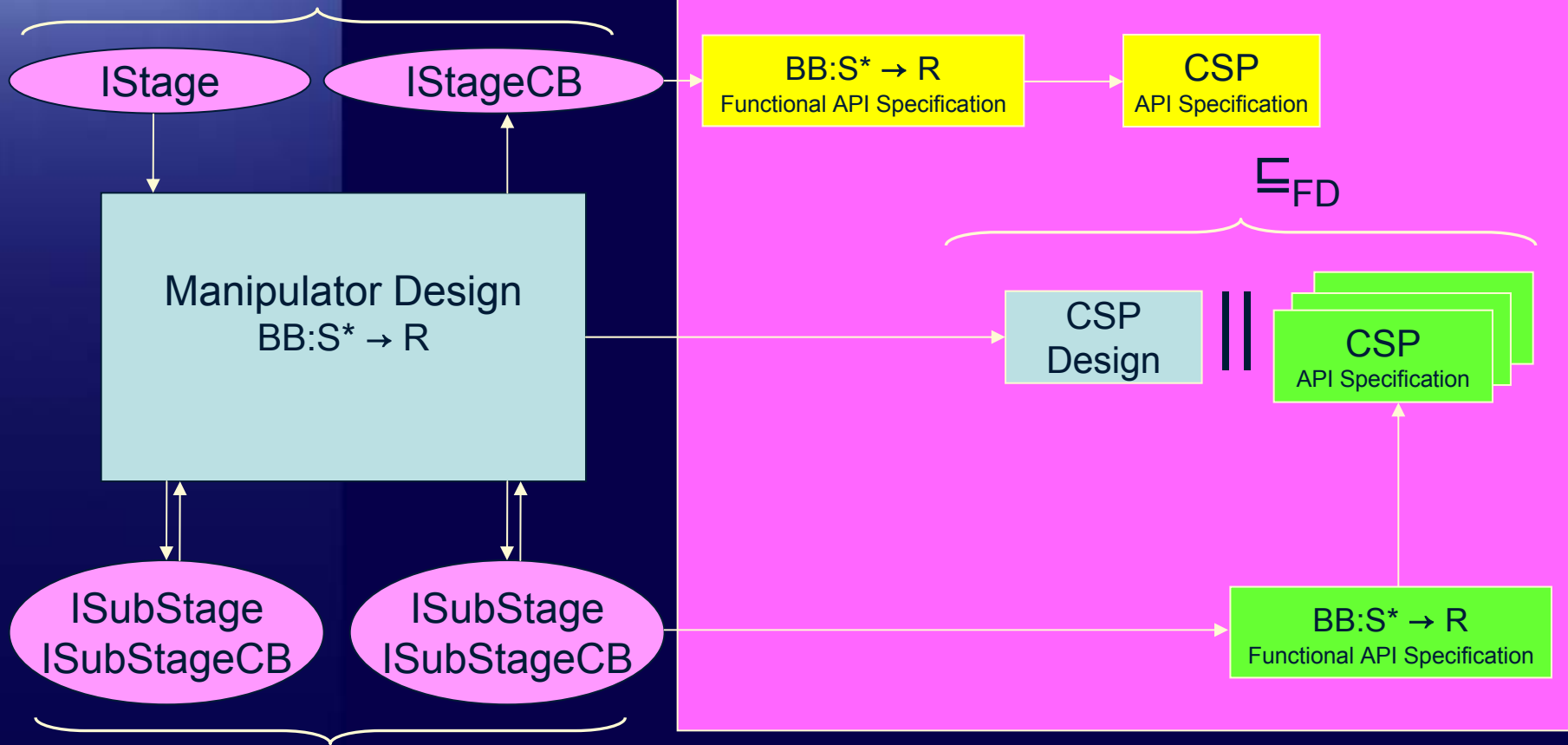
# Applying ASD (1)



# Applying ASD (2)



# Applying ASD (3)



# Results

- **Code Statistics**
  - Automatically generated C++ eLocs = 18,000
  - Hand-written C++ eLocs = 3,000
- **Defects Detected before Delivery**
  - Total defects = 5
  - Defects per 1,000- eLocs = 0.26
- **Productivity**
  - C++ eLocs per man hour = 12.9
  - Effort in man hours = 1,400