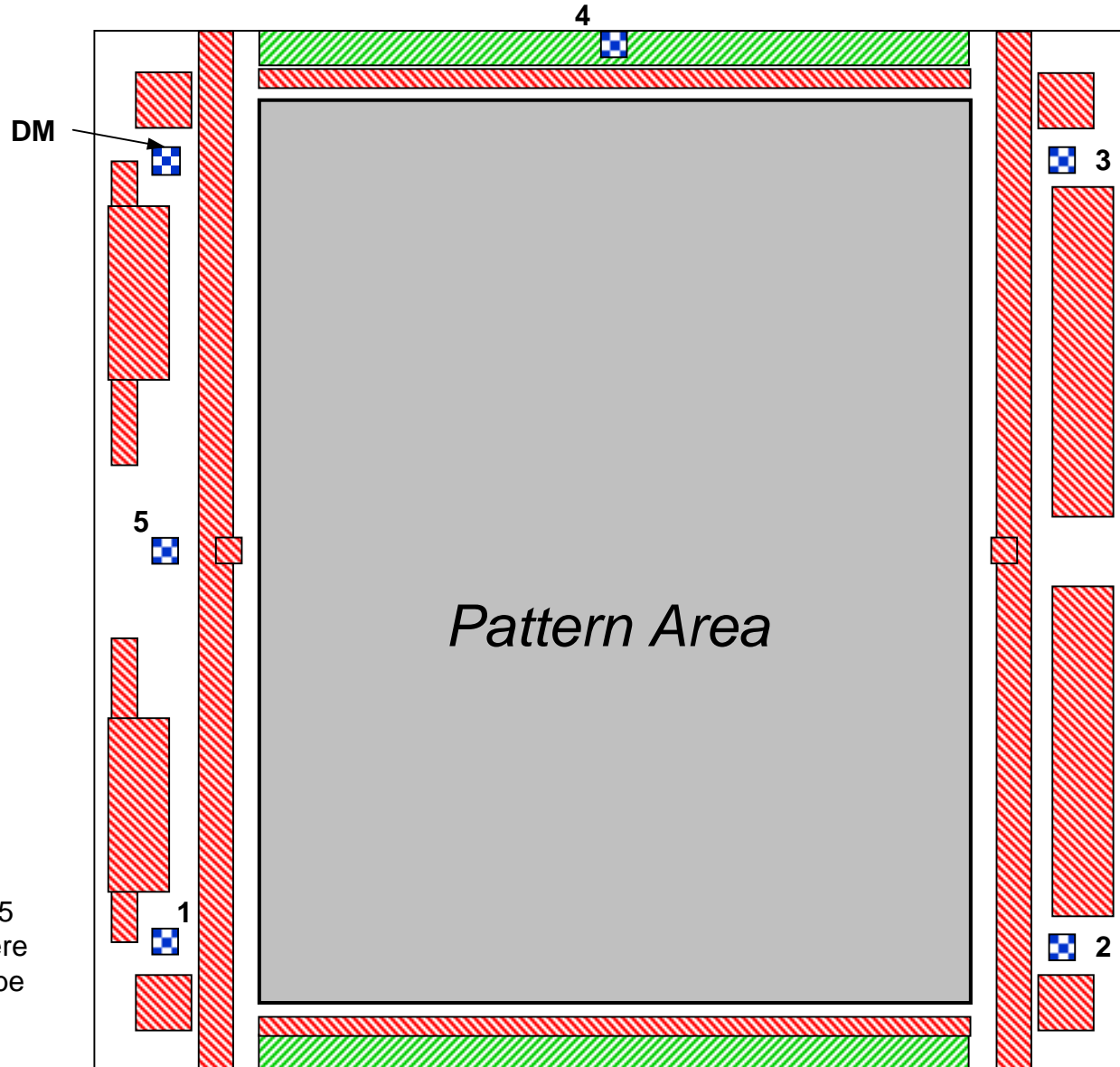


# Discussion Forum

- Topics for discussion
  - Carrier white paper
  - EUV mask blank fiducial marks – mask layout
  - Backside passivation
  - P37 flatness definition
  - Substrate thickness

# EUV Mask Layout (based upon ASML, Canon, & Nikon information)



Not reserved



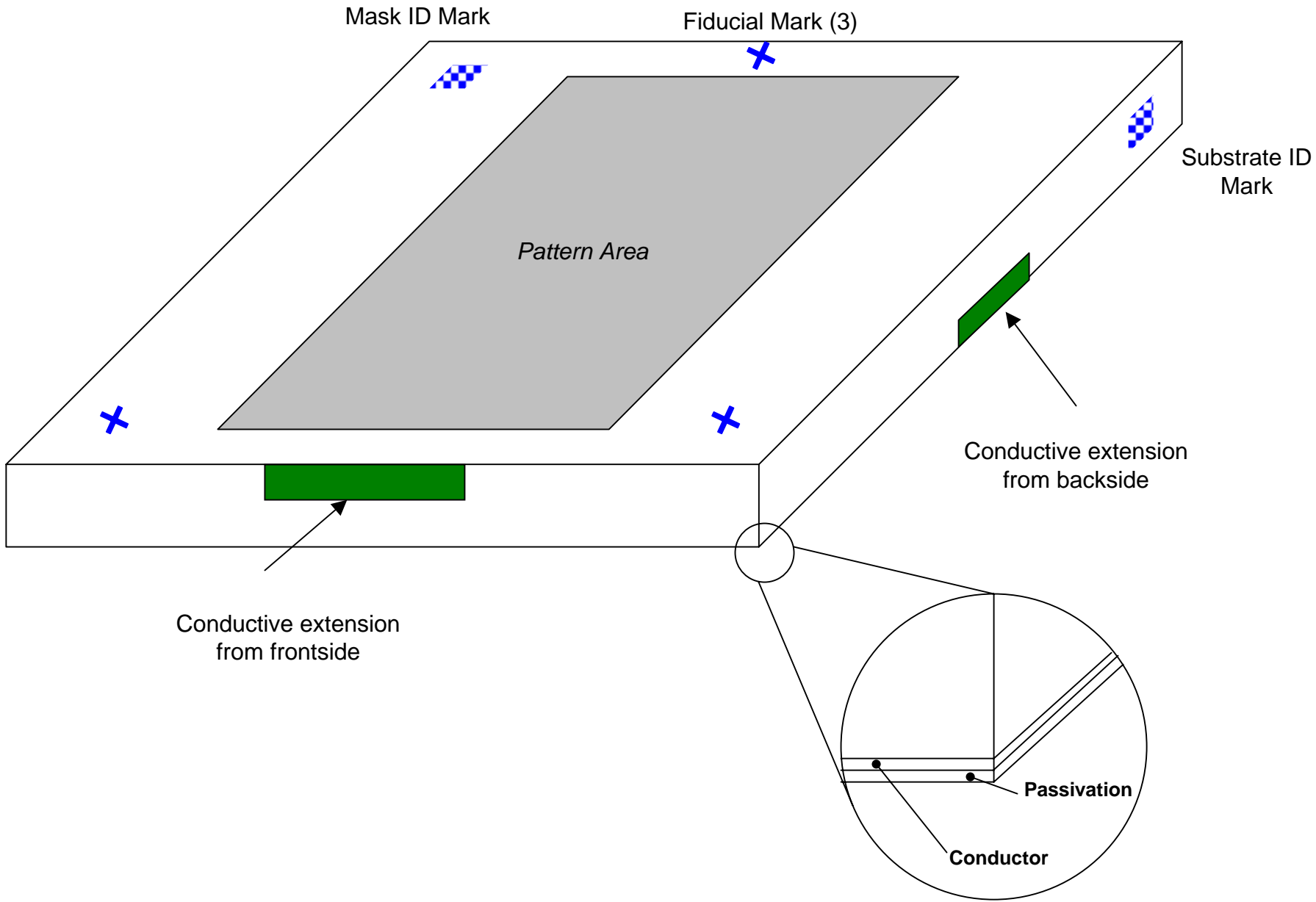
Reserved



Suggested  
-Data Matrix ID  
-Fiducial marks  
(1-2-4 or 2-3-5)

Alternatives:  
-DM placed at #5  
-DM placed where  
a barcode may be  
removed

# Possible Final EUV Mask



# Flatness specification is being actively evaluated

Specification is 50nm P-V for blank, but:

- a) Distortion from fixturing during flatness measurement can change figure 50-100nm
- b) Typical Mo/Si ML film stress will curve plate ~ 500nm

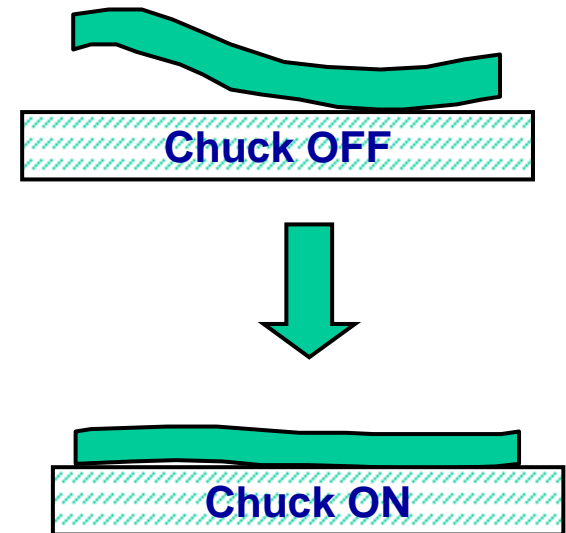
Issue under consideration:

- a) Distortions from fixturing and film stress are concentrated in low-order Legendre modes (low spatial frequencies)
- b) Electrostatic chucking forces in stepper can flatten low-order Legendre deformations

Current Sematech approach

Evaluate relaxing the flatness specification in favor of a chucking requirement:

- a) VNL supplying flatness measurements and specimens to University of Wisconsin
- b) Wisconsin testing chucking fixtures and modeling deformation using finite-element approach.
- c) **New requirement would include thickness at low Legendre orders, front-surface flatness at high Legendre orders.**



# Decisions needed

- Fiducial marks
  - Implement?
  - How many? More than three?
  - Locations
  - Positional tolerance
- Backside
  - Passivation? If so, specifications?
  - Metal based upon film stress?
- P37 Flatness specification
- Mask substrate thickness
  - Technical challenges
  - Economic impact
  - Decision deadline

# Captured comments / action requests