From Requirements to Specs

- Structured exploration of variations in classes of requirements
- Keeping multiple forms of description consistent (stylized-English, automata)
- Simulation-driven requirements exploration
  - Extraction of models from “final” simulation configuration
- Dependencies among requirements are essential
  - As requirements are elicited dependencies must be captured
  - Making explicit the invariants assumed by domain experts

End-to-End Development

- Distinguish between methods and “tools”
  - Methods shape the design flow by defining sequencing, choice and iteration among steps
  - “tools” are used at points in the design flow to make decisions, to transform descriptions
- Rather than think about embedded-system wide solution think about product-lines
  - Captures commonality among products (e.g., infusion pumps)
  - Identifies variability among products
  - Makes it easier for domain experts and engineers to interact since the product-line introduces common vocabulary, assumptions, …
  - Method/tool support can be customized for product-line (e.g., Cadena) with advantages for scalability of analyses, etc.

Documentation

- Documentation needs to be thought of as a complex of textual descriptions, models, simulations, …
  - It evolves as artifacts are developed
  - It can be checked for properties, e.g., for internal consistency, …
  - It can be queried, e.g., for traceability, …