Beyond Component Optimization:
The Necessity for Holistic Systems Engineering



Thermal Management Expo

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Adaptive Systems Approach for Breakthrough Innovations (ASABI)™



The ASABI™ methodology is an integration of techniques from several sources:

- Systems engineering (Steps 1, 2, 3, 5, 6)
- Objectives and key results (OKRs) (Steps 1, 9, 10)
- Agile and lean techniques (Steps 7, 9)
- Technology innovation (Steps 4, 8)
- Other sources in engineering, business, and other fields along with personal experience

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Adaptive Systems Approach for Breakthrough Innovations (ASABI)™



1. **Identify needs, goals, objectives & key metrics** (market opportunities, technology integration, etc.)

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2. **Evaluate assumptions, constraints, challenges & risks** (technical, resources, organizational, etc.)
3. **Define key driving requirements & concept of operations** (criteria for verification & validation)
4. **Leverage sources of innovation** (internal, customers, suppliers, partners, open, tech transfer, etc.)

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5. **Build system models for analysis, simulation & optimization** (evolves with system development)
6. **Perform design trades & assess technology options** (systematic selection of best design solution)
7. **Develop prototypes for performance, stakeholder & customer testing** (product-market fit)

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8. **Finalize intellectual property & strategic partners** (competitive advantage)
9. **Accelerate system deployment & product launch** (faster to market & quicker ROI)
10. **Execute growth strategy** (new business development & increasing revenues)

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