DDG 1000 Overview

DDG 1000 Program Manager, PMS 500
Captain Jim Downey

14 Jan 2014
Surface Navy Association (SNA)
25th National Symposium
DDG 1000 Program Highlights

- **Started DDG 1000 fabrication February 2009 – 88% complete (as of 17 Dec 13)**
  - 9 of 9 ULTRA Units on Land Level
  - Resulting in full ship (15,000 tons, 610 ft long)
  - Hangar arrived May 2012 at BIW and erected Jul 2012
  - Deckhouse arrived Nov 2012 at BIW and Erected Dec 2012
  - Launch 28 Oct 2013
  - Christening – Spring 2014

- **Started DDG 1001 fabrication March 2010 – 72% complete (as of 17 Dec 13)**
  - 100% of DDG 1001 is in fabrication at BIW and HII
  - Keel Laying 23 May 2013
  - Hangar arrived Oct 2013 at BIW
  - Deckhouse ECD Spring 2014

- **Started DDG 1002 fabrication 4 April 2012**

- **Integrated Power System (IPS) testing at Philadelphia Land Based Test Site (LBTS)**
  - Full Power (local control) completed May 2011
  - IPS with Engineering Control System (ECS) completed March 2012
  - Energized High Voltage Sep 2013

DDG 1000 ZUMWALT
Launch Preparation
DDG 1000 Program Highlights (Cont’)

- 94% of Mission Systems Equipment (MSE) delivery complete for DDG 1000 and 1001
  - Equipment delivered on time or early to shipyard
- Dual Band Radar (SPY-3 / VSR)
  - Developmental testing at Wallops Island completed Sep 2010
  - X Band Mods under development
- Software development progressing to support ship activation and delivery
  - Software Releases (SR) 1-6 completed
  - Releases 7-8 under contract and timed to support Post Delivery Availability (PDA) Post Shakedown Availability (PSA)
- Advanced Gun System (AGS) manufacturing underway at 3 facilities (Cordova, AL; Fridley, MN; and Louisville, KY)
  - 1st Ship AGS magazines and guns delivered early to BIW; MT61 and MT62 installed
  - 2nd Ship magazine installation in progress
  - Testing of 1st AGS gun at Dugway Proving Grounds, UT completed
  - All 3 Ship sets under contract
- Long Range Land Attack Projectile (LRLAP) development and testing
  - Guided flight tests (GFT) successfully completed Oct 2013
    - Demonstrated max range capability
    - Demonstrated outstanding accuracy
    - Demonstrated HOB operation with excellent lethality
  - Rocket motor redesign complete including hot/cold/ambient static fire tests
  - Low Rate Initial Production (LRIP) planned for FY14

### DDG 1000 Critical Technologies

**Engineering Development Models (EDMs) Used to Mitigate Production Risk Prior to Milestone B Decision**

<table>
<thead>
<tr>
<th>Dual Band Radar (DBR)</th>
<th>Composite Deckhouse &amp; Apertures Test Article</th>
<th>Advanced Gun System (AGS)/Long Range Land Attack Projectile (LRLAP)</th>
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<td><a href="#">Image: SDTS FY06-08</a></td>
<td><img src="#" alt="Composite Deckhouse &amp; Apertures Test Article" /></td>
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<tr>
<td>- MFR (X Band) at sea-based testing complete</td>
<td>- Composite production ability proven</td>
<td>- Full scale Gun and Magazine produced</td>
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<tr>
<td>- VSR (S Band) land-based testing complete</td>
<td>- Tested for RCS and EMI</td>
<td>- Automated Magazine and Gun rate of fire validated</td>
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<tr>
<td>- Leap ahead clutter rejection capability in the littorals</td>
<td>- Validated RCS KPP can be achieved</td>
<td>- Tactical Rocket Motor design demonstrated at threshold 63 NM range</td>
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<td>- MFR modification underway</td>
<td>- Detonation tests and missile restrained firing testing complete</td>
<td>- LRLAP Tactical Guided Flight Tests completed Oct 2013</td>
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<td>- Wallops/SDTS (2014-2015)</td>
<td>- Critical technology enables reduced manning</td>
<td>- Enhanced survivability design proven and ability to carry all current missiles (SM 2/3/6, ESSM, VLA with CEU mods)</td>
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<tr>
<td>- DDG 1000 (2015-2016)</td>
<td>- Software Releases complete</td>
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<td>- Full scale testing of components</td>
<td>- Detonation tests and missile restrained firing testing complete</td>
<td>- Software Releases complete</td>
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<td>- Full rated power and torque validated</td>
<td>- Enhanced survivability design proven and ability to carry all current missiles (SM 2/3/6, ESSM, VLA with CEU mods)</td>
<td>- Open Architecture principles applied</td>
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<td>- IPS motor fabrication started</td>
<td>- MFR modification underway</td>
<td>- Releases 7-8 support PDA/PSA schedule</td>
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<td>- Full Power testing completed</td>
<td>- Wallops/SDTS (2014-2015)</td>
<td>- Sea keeping, stability and RCS performance validated by model testing</td>
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<td>- ECS LBTS testing completed</td>
<td>- DDG 1000 (2015-2016)</td>
<td>- Underwater explosion testing complete – hull whipping requirement validated</td>
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<td>- HM&amp;E Activation Underway</td>
<td>- MFR (X Band) at sea-based testing complete</td>
<td>- Hull form certification underway</td>
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<td>- Energized High Voltage Sep 2013</td>
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<td>- At-sea weapons effect autonomic fire suppression testing demonstrated</td>
<td>- Sea keeping, stability and RCS performance validated by model testing</td>
<td>- At-sea mine avoidance capability proven</td>
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<td>- Critical technology enables reduced manning</td>
<td>- Underwater explosion testing complete – hull whipping requirement validated</td>
<td>- Reduced ASW Manning validated</td>
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Summary

• **DDG 1000 will be a multi-mission surface combatant tailored for the littorals**
  – Signature reduction, active and passive self-defense systems, and enhanced survivability features
  – Designed to fulfill volume firepower and precision strike requirements
  – Provides credible forward naval presence while operating independently or as an integral part of Naval, Joint, or Combined Expeditionary Strike Forces
  – Reduced Life Cycle Cost

• **DDG 1000, 1001, 1002 under contract and significant production underway**
  – DDG 1000/1001 completion 88% / 72% as of 17 Dec 2013
  – DDG 1002 April 2012 Start Fab
  – Most complete outfitting for first of class at launch