



NWS Science and Technology Roadmap

Dissemination



Team Composition



- **Craig Hodan, NWS/OOS—Team Lead**
- **Chung Wu, NWS/OST/SEC—Team Lead**
- **Brian Gockel, NWS/OST/SEC—Contributor**
- **Herb White, NWS/OCWWS—Contributor**
- **John Sokich, NWS/SP—Contributor**



Vision/Benefits/Impacts



- **Team Vision:**

- Identify, acquire and integrate information dissemination capabilities to provide NWS customers what they want, when they want, and where they need it, with format and content that facilitate interoperability to fully enable decision support services

- **Benefits**

- Ensure process is set for exploitation, integration, and leveraging of outside technology
- Accomplish a coherent, flexible, and cost-effective architecture/infrastructure to meet internal and external customer needs
- Employ common data, transport, and access formats for system interoperability to enable decision support services and customer-centric information delivery
- Decrease over-alerting and false alarms due to the limitations of system legacy

- **Impacts:**

- Reduce the dissemination latency and increase the lead time of high impact weather and non-weather events to the nation
- Build interoperable capability to promote interagency collaboration to deliver more efficient planning, response and recovery from significant and high impact events
- Improve dissemination to maximize reach to the affected areas in timely manner
- Increase economic productivity and prosperity by providing more refined data push/pull capability and standard-based format to enable business and industry to leverage and tailor weather information
- Save lives and mitigate loss of property through more rapid, efficient, and precise warning information



Goals/Targets: *Customer Needs*

Goal	Outstanding Issues
Satisfy complex and evolving customer needs for weather and non-weather information	Growth of user communities, new data products, increasing data volume, and stricter product-delivery latency requirements
Employ common data, transport, and access formats to promote the interoperability between systems	Intra and external systems coordination to adopt and implement the common data, transport, and access formats such as CAP format, XML, and social networking technologies
Provide Decision Support Services to deliver customer centric information with regard to what/when/where customers want or need	Integrate with emerging technologies to provide smart systems both wired and wireless to maximize flexible push-pull information dissemination to provide services for all DSS tiers



Goals/Targets: Emerging Science & Technology

Goal/Target	Outstanding Issues
Accomplish successful use and integration of Emerging Dissemination Technologies such as GIS, Web 2.0/3.0, and mobile devices (facilitated by industry partnerships, where appropriate)	Government-wide, DOC, NOAA and NWS policies required to be updated for support of emerging dissemination technologies and adoption of standards; Lack of transition to operation effort to realize operational and sustainment requirements
Achieve flexible and scalable dissemination network	Need for network bandwidth expansion to meet increasing data volume requirements
Deliver coherent, flexible, interoperable, and cost-effective dissemination systems	Today's dissemination systems have undesirable duplications and are stovepiped



Key Information Gaps

Gap	Solution Alternative	Impact
1. Lack of adopted standards for data storage and exchange	1.1 Implement the adopted standard data formats and transport protocols	Provide system interoperability, and reduce dissemination latency
2. Inadequate communication bandwidth	2.1 Leverage enterprise architecture and commercial communication services	Provide flexibility and scalability of dissemination network to address future requirements cost-effectively
3. Behind in integrating emerging dissemination technologies	3.1 Integrate and transition the essential emerging technologies into operation	Keep up with technology trend and address society needs
4. Lack of COOP/CIP capability for mission critical systems	4.1 Implement and deploy remote backup systems to address COOP/CIP requirements	Provide remote redundant operational backup capabilities for dissemination continuity during catastrophic events and improve network availability



Research Needs and Opportunities



- **Near Term**

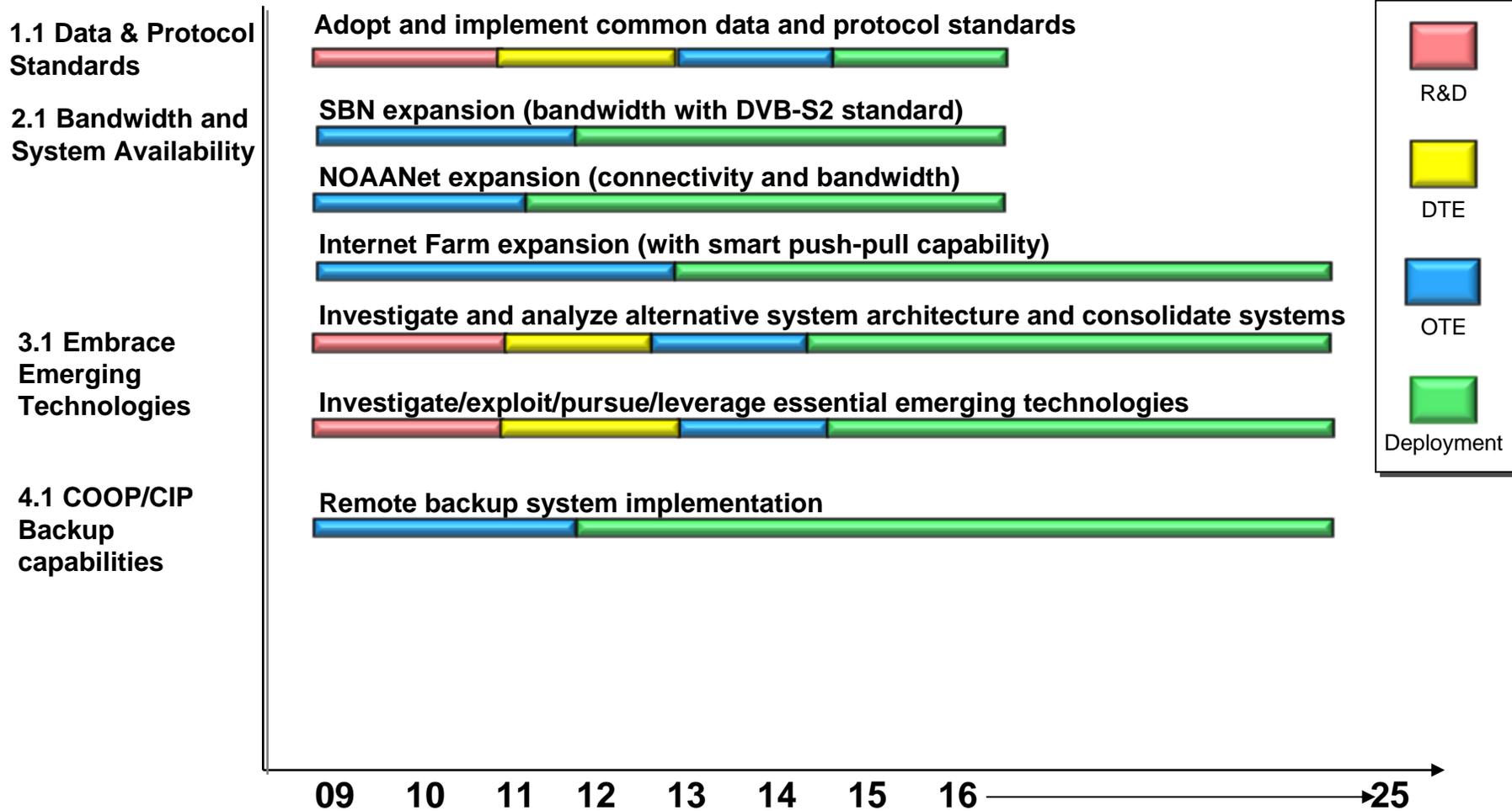
- Investigate, exploit, and leverage emerging technologies and standards to identify and acquire the essential new technologies to meet evolving mission and customer needs for implementation
- Investigate and analyze alternative architectures to develop a coherent, flexible, and cost-effective dissemination system architecture to support future dissemination needs and evolving technologies

- **Long Term**

- Continue to investigate, exploit, pursue, and leverage emerging technologies and standards to provide the required technology refresh and to stay relevant with technology trends

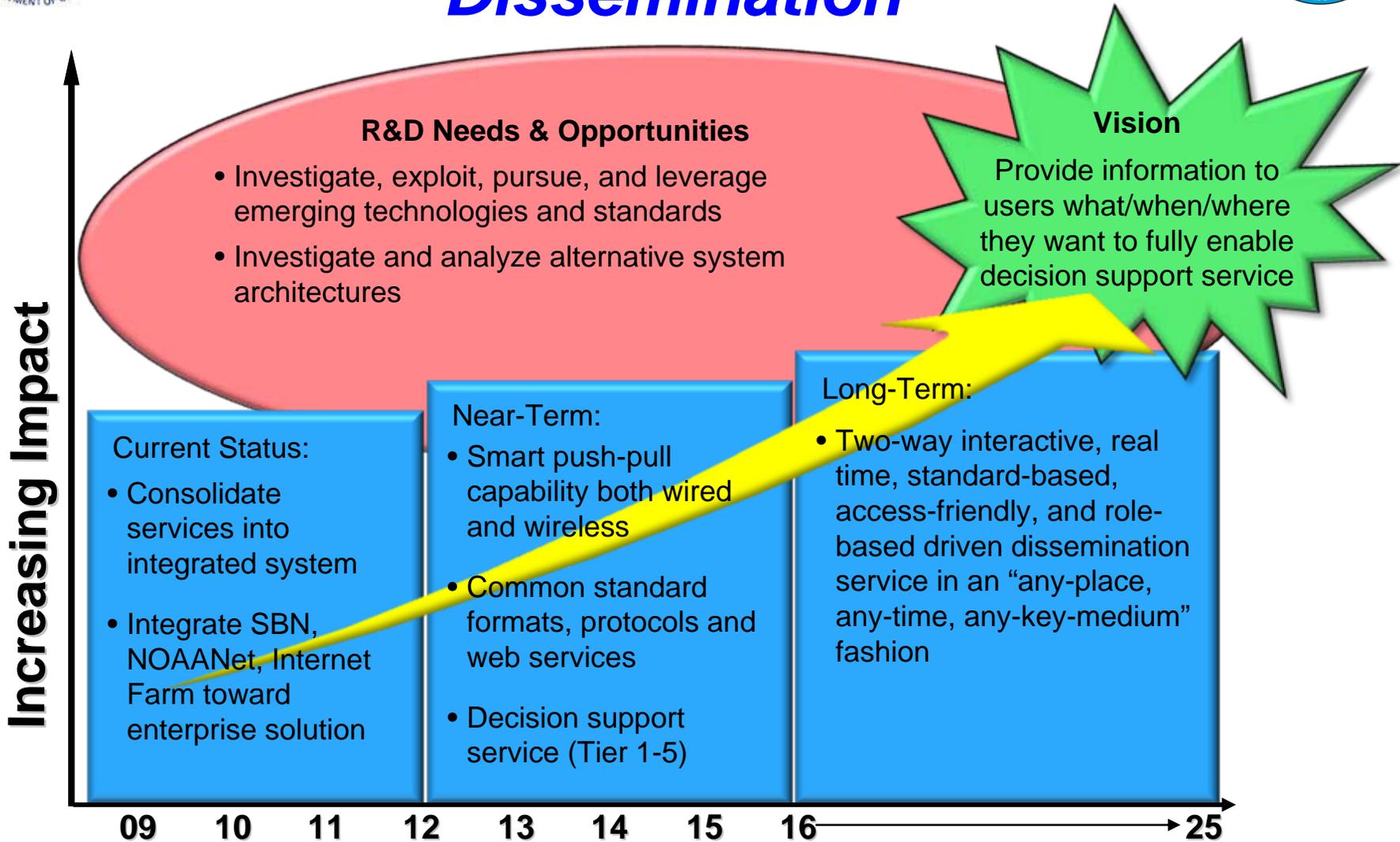


Dissemination Alternative Solutions





Focus Area Team Summary: Dissemination





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Dissemination Team Additional Information



Target Performance Measures: Dissemination



Proposed	Current (2009)	FY 16 Target Example	FY 25 Target Example
Dissemination latency Time for warning messages	<10 sec for NWWS <30 sec for EMWIN <1 min for NWR <3 min for Web Services	<8 sec for NWWS <25 sec for EMWIN <45 sec for NWR <2 min for Web Services	<6 sec for NWWS <20 sec for EMWIN <30 sec for NWR <1.5 min for Web Services
SBN bandwidth expansion	10 Mbps	35 Mbps with DVB-S2	45 Mbps with DVB-S2
NOAANet connectivity and bandwidth expansion	WFOs, RFCS, Regions, Centers, AWIPS	Support mission-critical observation, processing, and dissemination systems with VSAT backup	Support all observation, processing, and dissemination systems with VSAT backup
Smart push-pull capability to support Decision Support Service (DSS)	Tier 5 and 4	Tier 5, 4, 3, 2, and 1	Two-way interactive, real time, standard-based, and role-based driven services in an “any-place, any-time, any-key-medium” fashion
Adopt and implement common data and protocol standards	None	Major systems	All systems
COOP/CIP remote backup capabilities	Mission-critical systems	All major systems	All systems