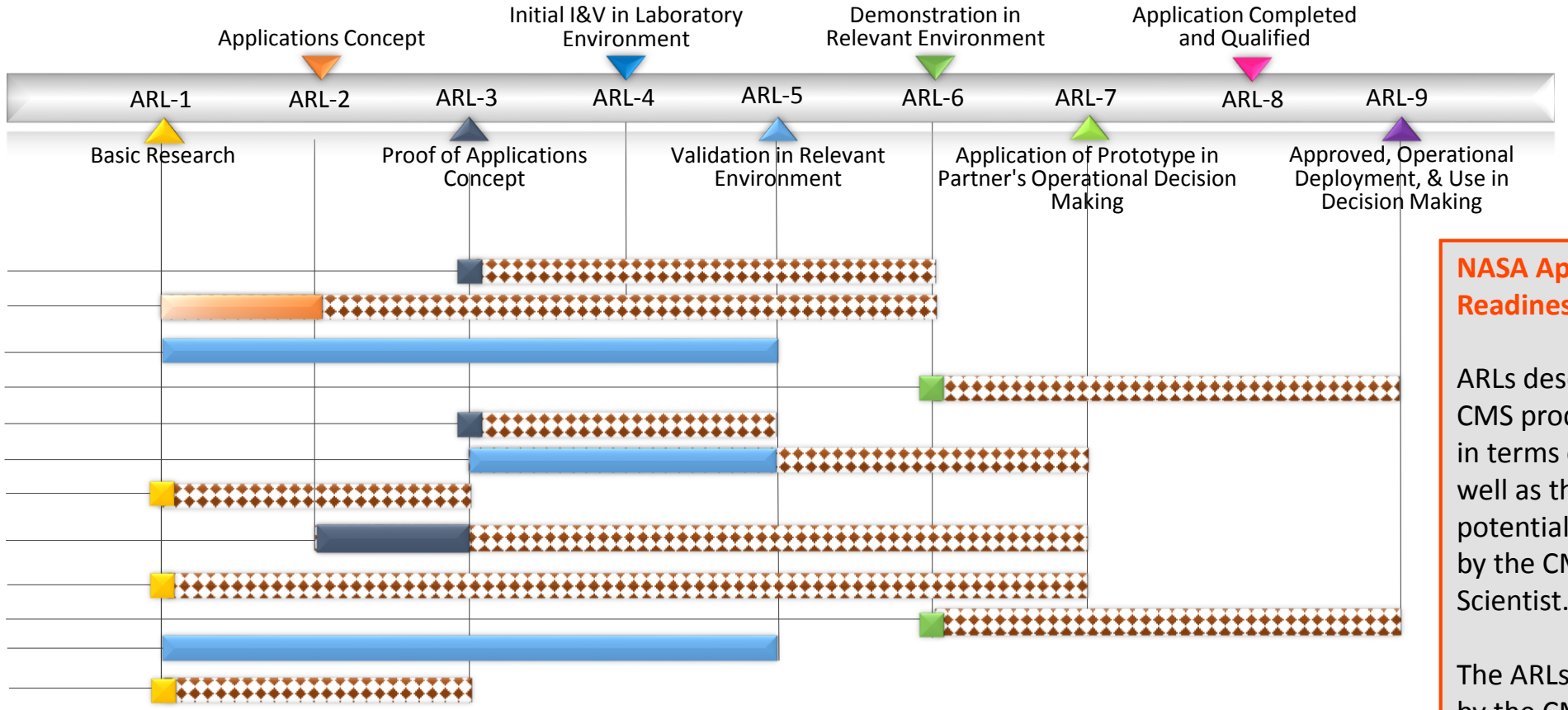
SY 2013 Projects



Cohen-02
Graven-01
Nehrkorn-01

Different ARLs are provided for the products in these projects. Refer to individual corresponding charts describing the product ARLs.

Project ID
PI-Project # (Andrews-02)-Each CMS Project is represented by its color and identified by the PI on the project

Solid color: each solid bar is indicative of where the PI feels their project is NOW in terms of application readiness.
Pattern fill: indicates the level each PI is striving for and the application readiness level they feel their project can ultimately satisfy.
Gradient fill: indicates current level has not been reached fully.

NASA Application Readiness Levels (ARLs)

ARLs describe where the CMS product is currently in terms of readiness, as well as the desired and potential level as defined by the CMS Product Scientist.

The ARLs were provided by the CMS Product Scientist and represent the most accurate representation of the state of each product.

Products can start at any level. It is not expected they will start at ARL1 and end at ARL9.

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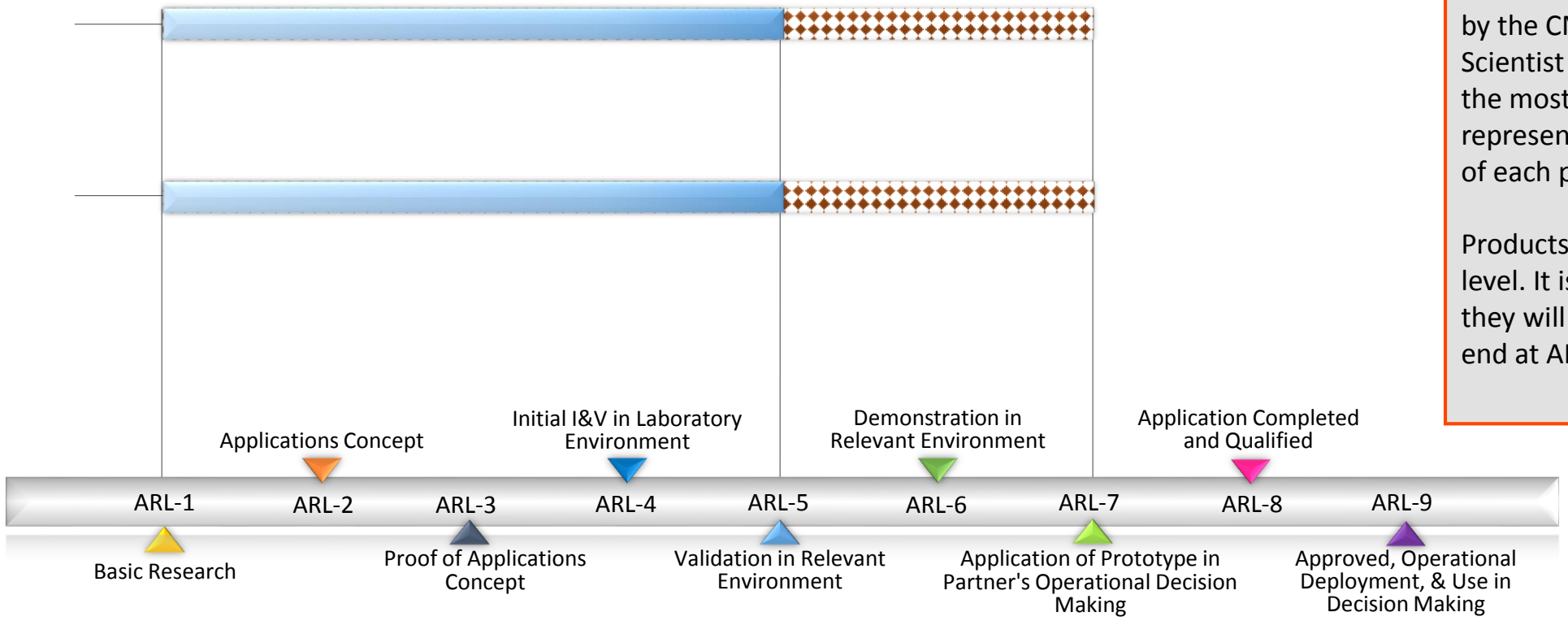
Cohen-02 Products

Maps and estimates of disturbance

Maps and estimates of aboveground biomass



SY 2013

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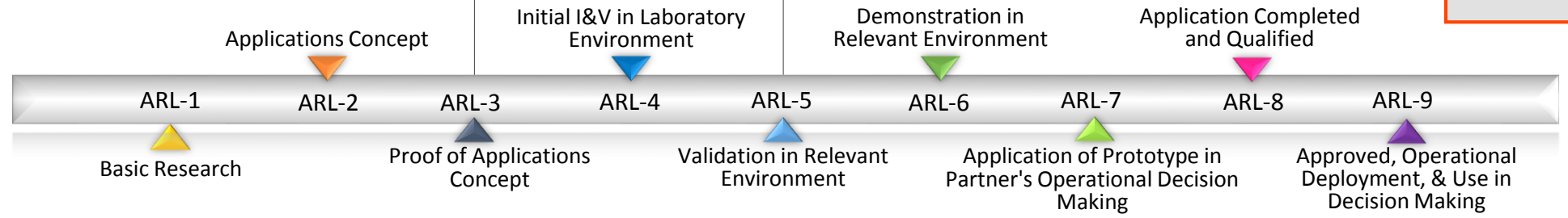
Graven-01 Products

Biospheric CO2 flux estimates

Fossil fuel emissions estimates



SY 2013

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Nehrkorn-01 Products

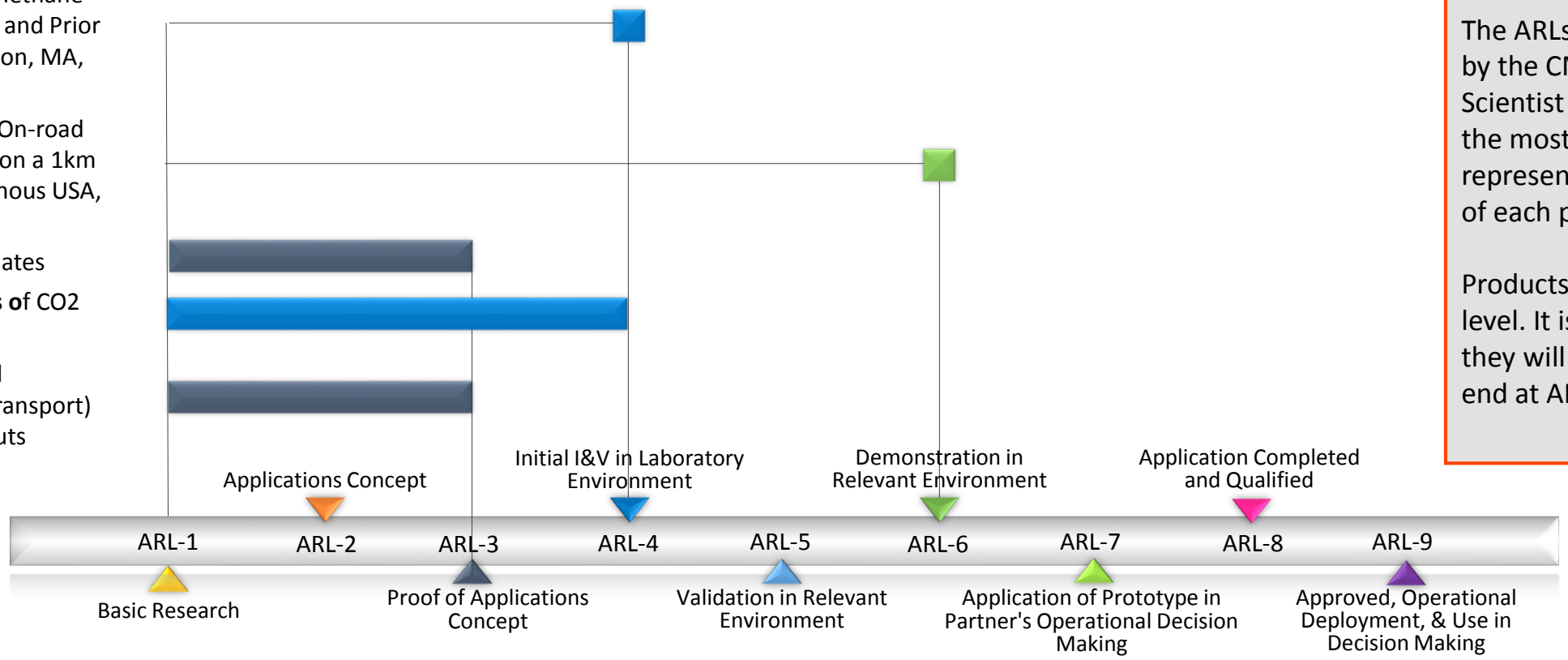
Atmospheric Methane Concentrations and Prior Emissions, Boston, MA, 2012-2014

DARTE Annual On-road CO2 Emissions on a 1km Grid, Conterminous USA, 1980-2012

CMS Flux Estimates

Measurements of CO2 concentrations

Meteorological (atmospheric transport) modeling outputs



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CMS Application Readiness Level Descriptions

Color Code	Applications Readiness Level	Description
	ARL-1	Basic research
	ARL-2	Applications Concept
	ARL-3	Proof of Applications concept
	ARL-4	Initial integration and verification in a laboratory environment
	ARL-5	Validation in relevant environment
	ARL-6	Demonstration in relevant environment
	ARL-7	Application of prototype in partners' operational decision making
	ARL-8	Application completed and qualified
	ARL-9	Approved, operational deployment, and use in decision making

Desired Level

START YEAR 2013 CMS PROJECTS

Project Group	Project Title
Asrar-West-04	Carbon Monitoring of Agricultural Lands: Developing a Globally Consistent Estimate of Carbon Stocks and Fluxes
Brown-01	Applications of the NASA Carbon Monitoring System: Engagement, Use, and Evaluation
Cochrane-01	Filling a Critical Gap in Indonesia's National Carbon Monitoring, Reporting, and Verification Capabilities for Supporting REDD+ Activities
Cohen-02	An Historically Consistent and Broadly Applicable MRV System Based on Lidar Sampling and Landsat Time-series
Collatz-02	Improving and extending CMS land surface carbon flux products including estimates of uncertainties in fluxes and biomass
Dubayah-04	Development of a Prototype MRV System to Support Carbon Ecomarket Infrastructure in Sonoma County
Dubey-01	Off-the-shelf Commercial Compact Solar FTS for CO2 and CH4 Observations for MRV
Duren-01	Understanding user needs for carbon monitoring information
Graven-01	Quantifying fossil and biospheric CO2 fluxes in California using ground-based and satellite observations
Hagen-01	Operational multi-sensor design for national scale forest carbon monitoring to support REDD+ MRV systems
Keller-01	A data assimilation approach to quantify uncertainty for estimates of biomass stocks and changes in Amazon forests
Kellndorfer-03	Time Series Fusion of Optical and Radar Imagery for Improved Monitoring of Activity Data, and Uncertainty Analysis of Emission Factors for Estimation of Forest Carbon Flux
Lauvaux-01	Quantification of the sensitivity of NASA CMS Flux inversions to uncertainty in atmospheric transport
Morton-02	A Joint USFS-NASA Pilot Project to Estimate Forest Carbon Stocks in Interior Alaska by Integrating Field, Airborne and Satellite Data
Nehrkorn-01	Prototype Monitoring, Reporting and Verification System for the Regional Scale: The Boston-DC Corridor
Stehman-01	Developing Statistically Rigorous Sampling Design and Analysis Methods to Reduce and Quantify Uncertainties Associated with Carbon Monitoring Systems
Vargas-01	A framework for carbon monitoring and upscaling in forests across Mexico to support implementation of REDD+