

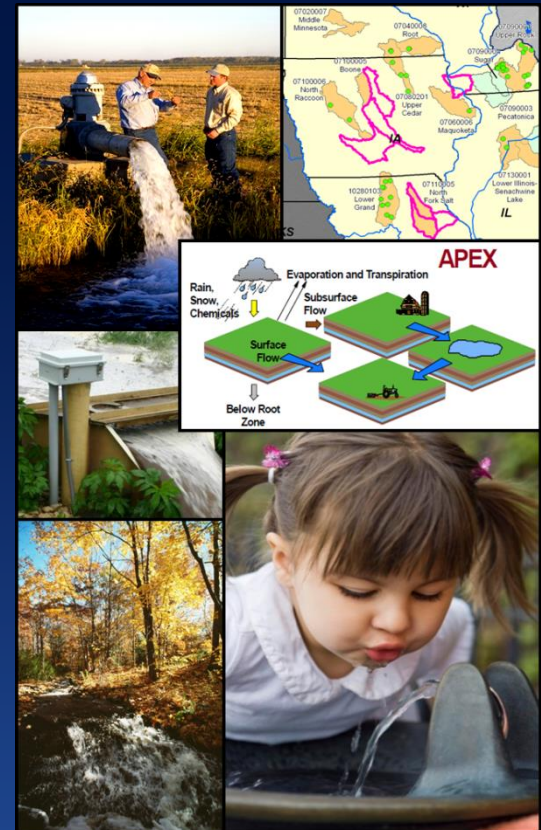
Nutrient Tracking Tool

December 11, 2014



Nutrient Tracking Tool (NTT)

- NTT was built for Nutrient Trading
- It is a user friendly, web-based interface for Agriculture Policy Extender (APEX) Data provisioning is automated to Area of Interest (AOI):
 - 50 years of daily time step data
 - Soil information from web soil survey
 - Agronomic information from LMOD





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Nutrient Tracking Tool

- NTT is envisioned as the planning tool for environmental outcomes in NRCS planning tools
- NTT is also being used as the science tool behind water quality trading and functions as a USDA application

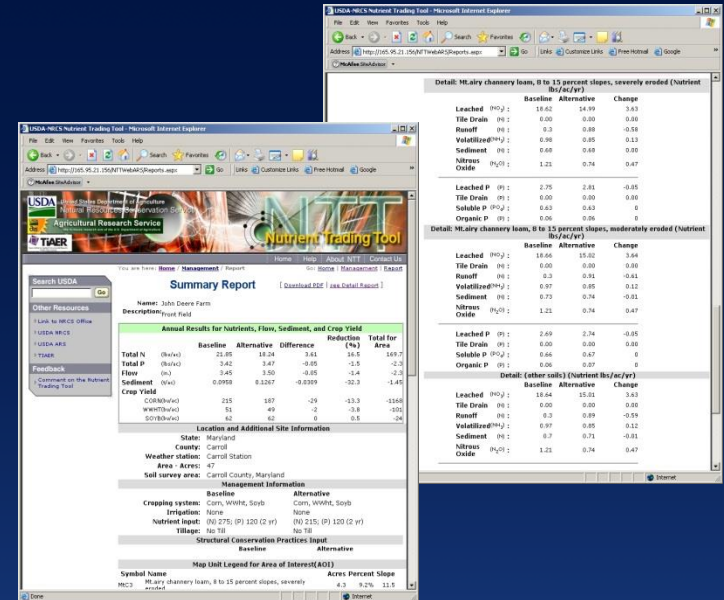


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Nutrient Tracking Tool Ongoing CIG Projects

- Mississippi
- California
- Missouri
- Chesapeake Bay
- Oregon, Washington and Idaho

NTT calculates the output of the APEX model in terms of *delta* products or the difference between existing conditions and proposed conservation.



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Nitrogen and Phosphorus Saved



NTT Summary Report

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Summary Report

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Name: John Deere Farm
Description: Front Field Run Number: 11209

Annual Results for Nutrients, Flow, Sediment, and Crop Yield					
	Baseline	Alternative	Difference	Reduction (%)	Total for Area
Total N (lbs/ac)	21.85	18.24	3.61	16.5	169.7
Total P (lbs/ac)	3.42	3.47	-0.05	-1.5	-2.3
Flow (in.)	3.45	3.50	-0.05	-1.4	-2.3
Sediment (t/ac)	0.0958	0.1267	-0.0309	-32.3	-1.45
Crop Yield					
CORN(bu/ac)	215	187	-29	-13.3	-1168
WWHT(bu/ac)	51	49	-2	-3.8	-101
SOYB(bu/ac)	62	62	0	0.5	-24

Location and Additional Site Information	
State:	Maryland
County:	Carroll
Weather station:	Carroll Station
Area - Acres:	47
Soil survey area:	Carroll County, Maryland

Management Information	
	Baseline Alternative
Cropping system:	Corn, WWht, Soyb Corn, WWht, Soyb
Irrigation:	None None
Nutrient input:	(N) 275; (P) 120 (2 yr) (N) 215; (P) 120 (2 yr)
Tillage:	No Till No Till

Structural Conservation Practices Input	
Baseline	Alternative

Map Unit Legend for Area of Interest(AOI)			
Symbol Name	Acres	Percent	Slope
MtC3 Mt.airy channery loam, 8 to 15 percent slopes, severely eroded	4.3	9.2%	11.5

- Unique Serial Numbers
- Baseline Condition
- Alternative Condition
- Total N
- Total P
- Sediment
- Crop Yield
- Crop Yield
- Location Summary
- Management Information
- Conservation Practices



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NTT - Detailed Report

USDA-NRCS Nutrient Trading Tool - Microsoft Internet Explorer

Address: http://165.95.21.156/NTTWebApp/ports.aspx

Detail: Mt.airy channery loam, 8 to 15 percent slopes, severely eroded (Nutrient lbs/ac/yr)

	Baseline	Alternative	Change
Leached (NO_3^-)	18.62	14.99	3.63
Tile Drain (N)	0.00	0.00	0.00
Runoff (N)	0.3	0.88	-0.58
Volatilized (NH_3)	0.98	0.85	0.13
Sediment (N)	0.68	0.68	0.00
Nitrous Oxide (N_2O)	1.21	0.74	0.47
Leached P (P)	2.75	2.81	-0.05
Tile Drain (P)	0.00	0.00	0.00
Soluble P (PO_4)	0.63	0.63	0
Organic P (P)	0.06	0.06	0

Detail: (other soils) (Nutrient lbs/ac/yr)

	Baseline	Alternative	Change
Leached (NO_3^-)	18.64	15.01	3.63
Tile Drain (N)	0.00	0.00	0.00
Runoff (N)	0.3	0.89	-0.59
Volatilized (NH_3)	0.97	0.85	0.12
Sediment (N)	0.7	0.71	-0.01
Nitrous Oxide (N_2O)	1.21	0.74	0.47
Leached P (P)	2.69	2.74	-0.05
Tile Drain (P)	0.00	0.00	0.00
Soluble P (PO_4)	0.66	0.67	0
Organic P (P)	0.06	0.07	0

Detail: Mt.airy channery loam, 8 to 15 percent slopes, severely eroded (Nutrient lbs/ac/yr)

	Baseline	Alternative	Change
Leached (NO_3^-)	18.62	14.99	3.63
Tile Drain (N)	0.00	0.00	0.00
Runoff (N)	0.3	0.88	-0.58
Volatilized (NH_3)	0.98	0.85	0.13
Sediment (N)	0.68	0.68	0.00
Nitrous Oxide (N_2O)	1.21	0.74	0.47
Leached P (P)	2.75	2.81	-0.05
Tile Drain (P)	0.00	0.00	0.00
Soluble P (PO_4)	0.63	0.63	0
Organic P (P)	0.06	0.06	0

Constituents by location and type



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Nutrient Tracking Tool Current Development

- User Interface Development
 - Integrate GUI selection tool from CSU
 - Web Services data provisioning
 - HRDE – Climate
 - Web Soil Survey
 - LMOD connections for agronomics
 - Enhanced graphics on reporting



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Nutrient Tracking Tool Current Development

- Data provisioning is being automated based on Area of Interest (AOI)
 - 50 years of daily time step data
 - Soil information from web soil survey
 - Agronomic information from LMOD
- NTT functionality will be embedded in other USDA tools



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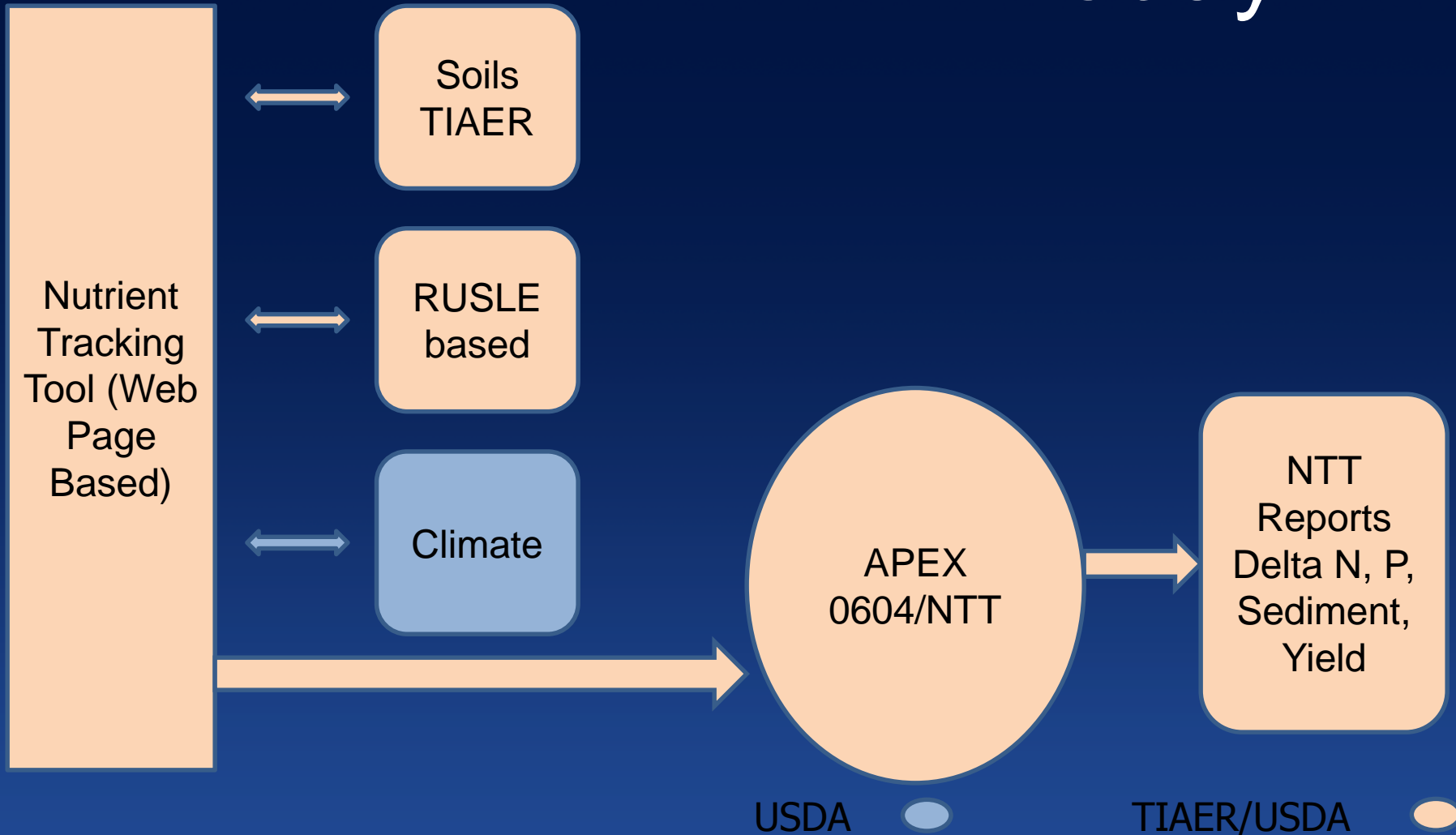
Nutrient Tracking Tool 5 Year Plan

- Model Refinement
- Data Quality Improvement
- Parameterization
 - Parameterization methodology - 2014
 - Ohio River Basin Proof of Concept - 2014
 - Pacific Northwest Parameterization – 2015
 - Great Lakes, Gulf Coast, CA, Mississippi River Basin..... 2015 - 2018



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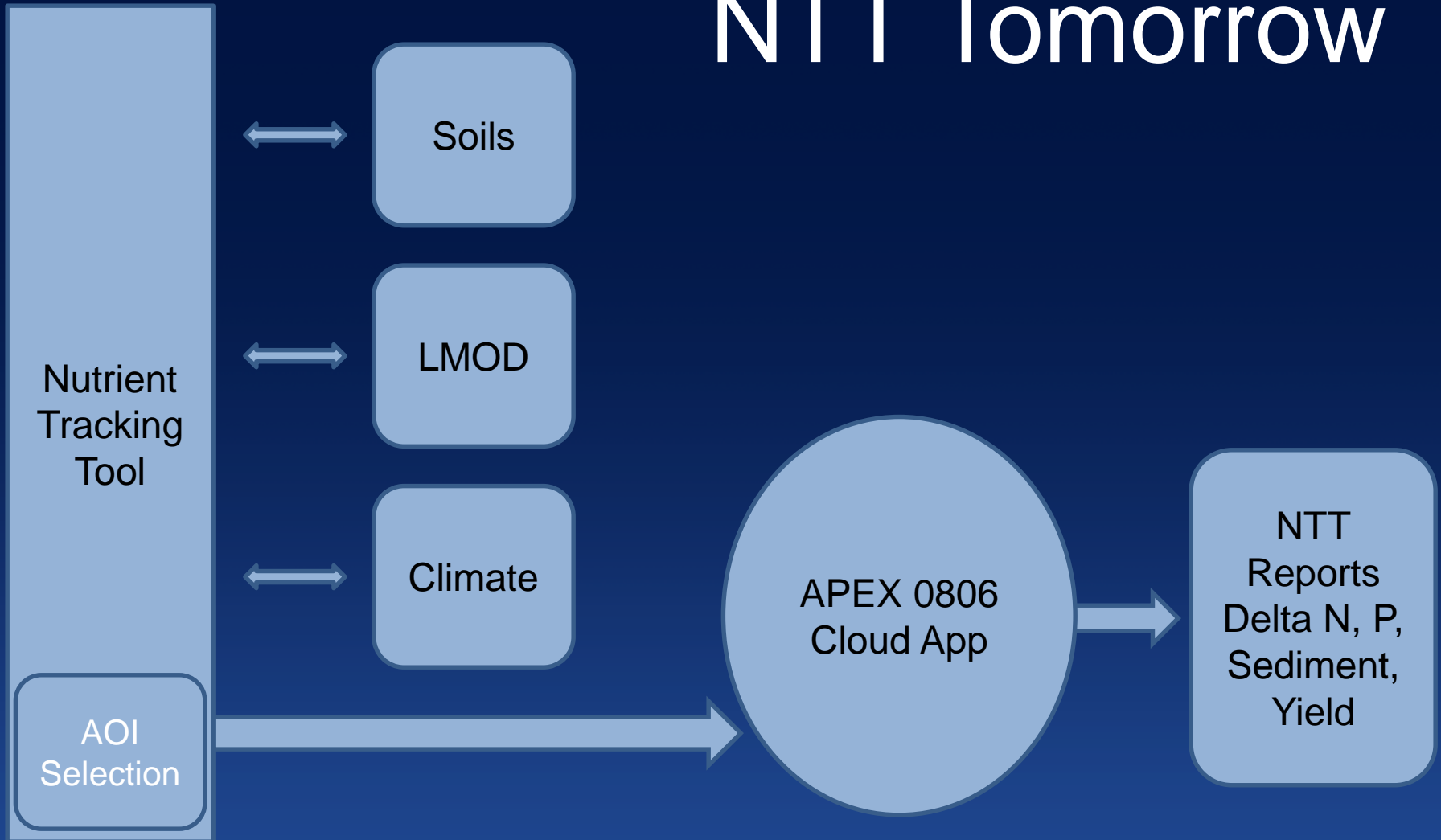
NTT Today





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NTT Tomorrow



USDA



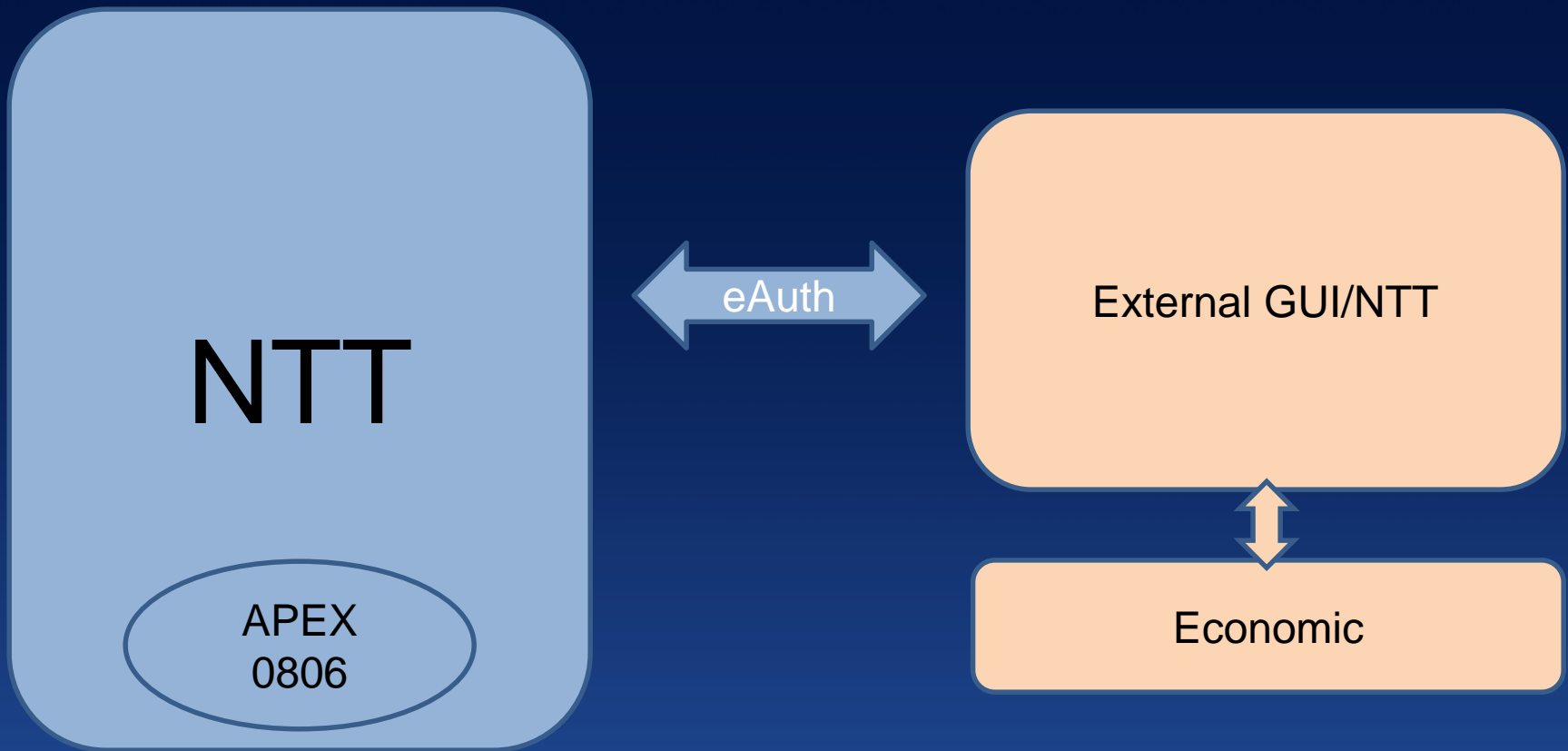
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NTT Partnership Opportunities



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