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This is the second slide of the presentation. It has a dark blue header bar with the NSA Compliance logo and the text "THE COMPLIANCE GROUP" on the left. The main content area is white and features the title "Agenda" in a large, bold, dark blue font. Below the title is a bulleted list of topics. The slide is framed by a dark blue border at the bottom, which contains a small number "2" on the right side.

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Analytics – Replacing the Human

Tools that make our work easier can be compliant.

They have to be compliant.

In context, compliance with the law provides authority for the Government to access data...

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Analytics is the discovery, interpretation, and communication of meaningful patterns in data; and the process of applying those patterns towards effective decision making. Analytics can be understood as the connective tissue between data and effective decision making, within an organization.

- Wikipedia

ANALYTICS

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Analytics - reusable, shareable and executable instantiations of the automatable components of analytic solutions. These may be developed from analytic workflows by applying tools and techniques appropriate to a particular kind of data to assist the analyst in interpreting the results in the analytic process.

- NSA

ANALYTICS

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Analytics at NSA

People analytics
People Analytics is using behavioral data to understand how people work and change how companies are managed.

Digital analytics
Digital analytics is a set of business and technical activities that define, create, collect, verify or transform digital data into reporting, research, analyses, recommendations, optimizations, predictions, and automations

Risk analytics
Predictive models used to identify potential process pitfalls or areas for additional scrutiny.

Portfolio Analytics
A COMMON APPLICATION OF BUSINESS ANALYTICS IS PORTFOLIO ANALYSIS

Security analytics
Security analytics refers to information technology (IT) to gather and analyze security events to understand and analyze events that pose the greatest risk. Products in this area include security information and event management and user behavior analytics.

- Wikipedia

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Turn Information into Insight

COMPLEX INSIGHTS


Complexity

- Privacy:** Adversary and U.S. citizen communications intermingle in the same battlespace.
- Encryption:** Encryption hinders target discovery and analysis and requires human-intensive analytic ingenuity to overcome.
- Timeliness:** Adversary information flows in real-time, whereas NSA acquired data requires extensive processing to analyze and derive complex insights.

Transforming how analysts, machines, and our customers interact with our data is the key to gaining more complex insights.

- Compliments of Paul C.

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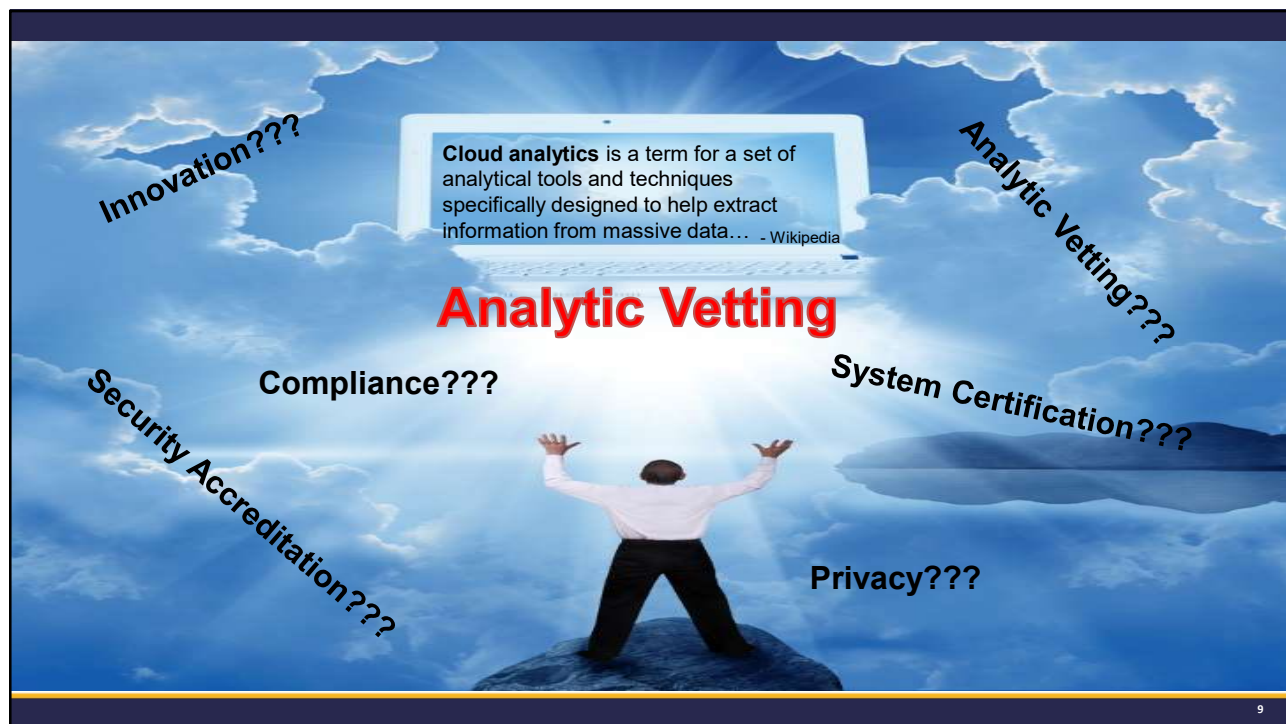
The Future of Analytics is NOW!

Tools that make our work easier can be compliant...

Analytics, APPS, spreadsheets, code...

The development of analytics is proceeding faster than imagined – how many new APPs appear for your phone in a week? Compliance must keep or outpace this development.

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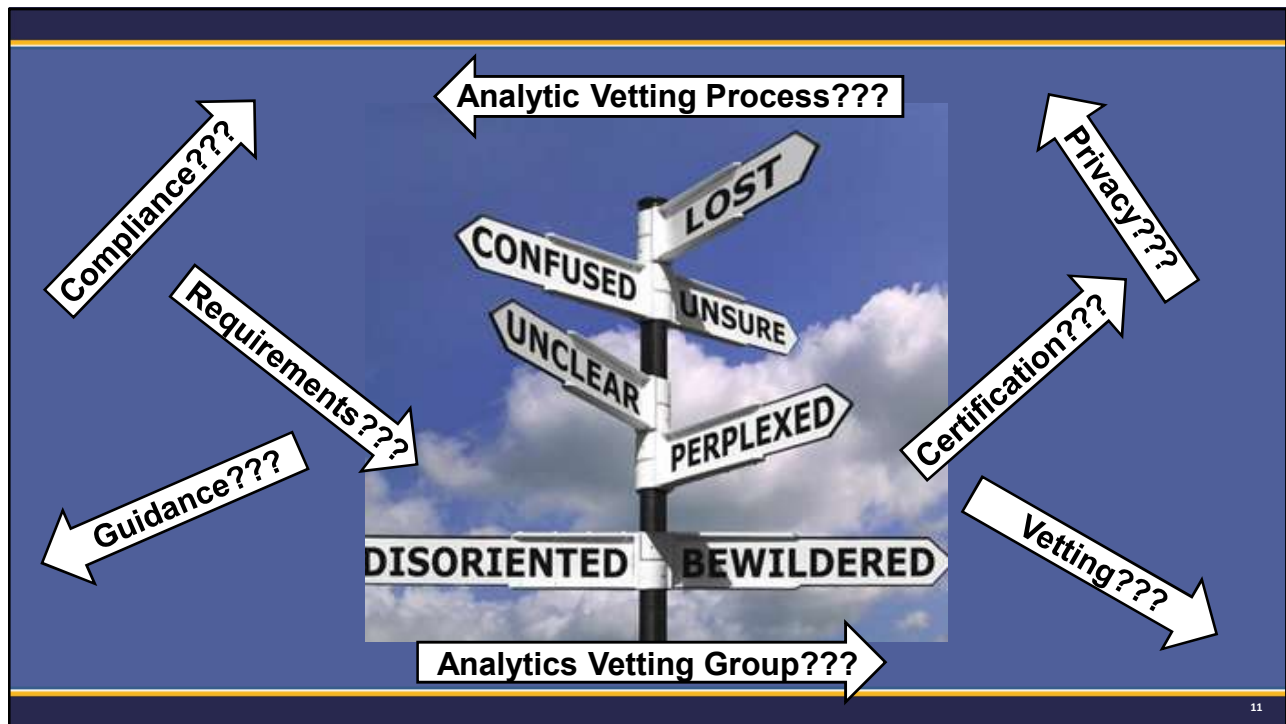
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Analytic Vetting Process (AVP)

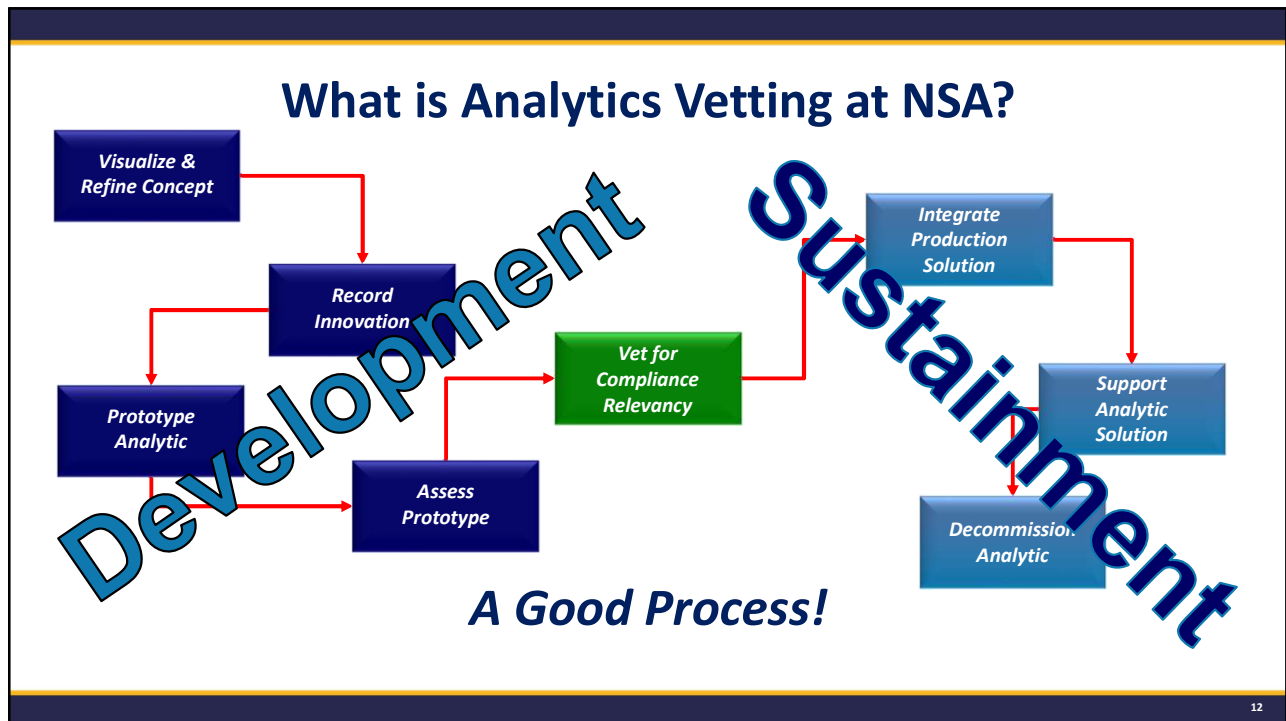
The Analytic Vetting Process (AVP) is the procedure an analytic follows from inception to deployment. The AVP accelerates the approval process for moving cloud analytics from development to production helping to meet mission demands and compliance requirements

The AVG is a subset of the AVP

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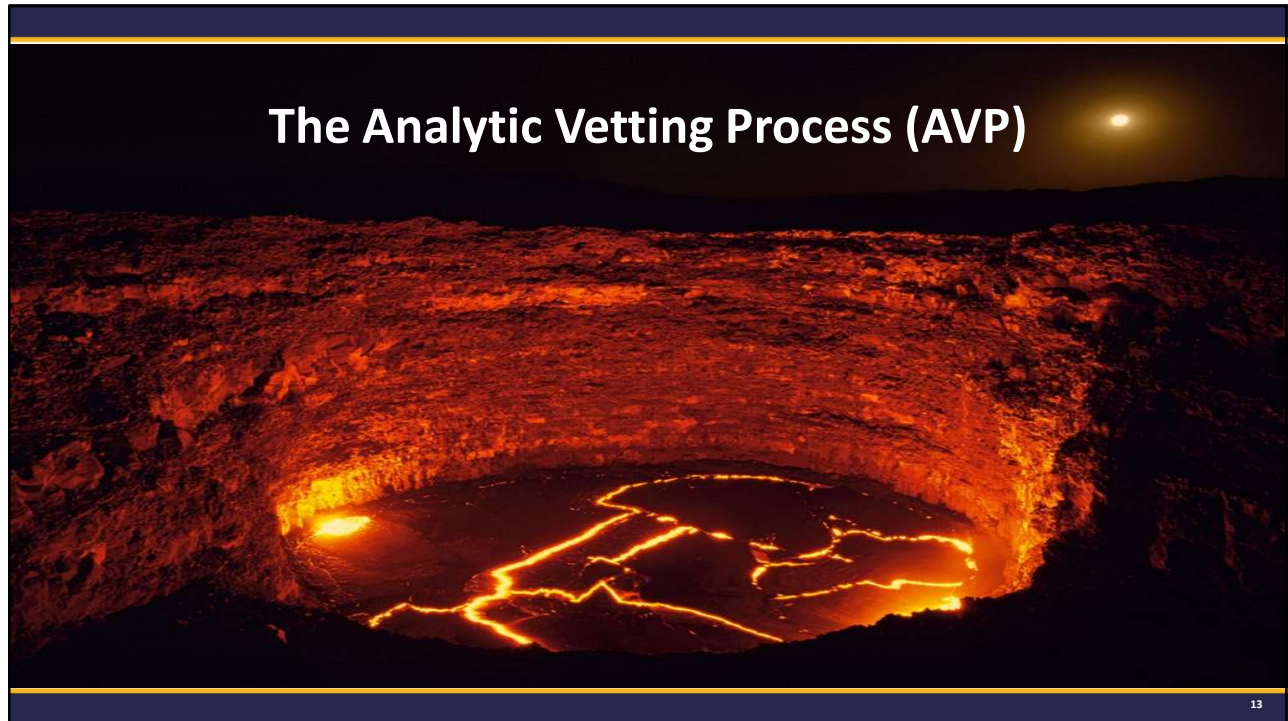


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The Analytic Vetting Process (AVP)



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AVP – Visualize & Refine the Analytic

Visualize/Refine the Analytic

Customers, Developers and Mission Experts discuss:

- *what results are needed*
- *what footprint is available*
- *how much money it's going to cost*

AFAL & ALA

Analytic Focus Area Lead

- *determines if analytic has a mission need and if the analytic already exists*

Analytic Local Approver

- *determines if the analytic needs to go to the AVG for compliance vetting*

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AVP – Adding Mission Focus

Analytic Focus Area Leads (AFAL)

- **AFA Mission Lead**

- AFA Mission Leads are responsible for de-duplicating analytics in addition to prioritizing them. They have a breadth of knowledge regarding all analytics in their Focus Area. They should be engaged before development begins.

- **AFA Technical Lead**

- AFA Technical Leads are available to provide technical guidance based on implementation and requirements necessary to support analytics.
 - (e.g. Which platform would be best to support this analytic?)

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AVP - Documentation

- Documentation must occur at multiple levels during the life cycle of the analytic
- Information about the code, the algorithms, the processing are recorded
- We can't recreate or troubleshoot the analytic without it – nothing new here...

So how do we document the compliance aspects of the analytic?

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AVP - Prototyping

Prototyping the Analytic

- performed in a “safe” environment
- mistakes are easily corrected
- mission is not affected
- up front work done to ease through to deployment

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AVP – Prototype Assessment

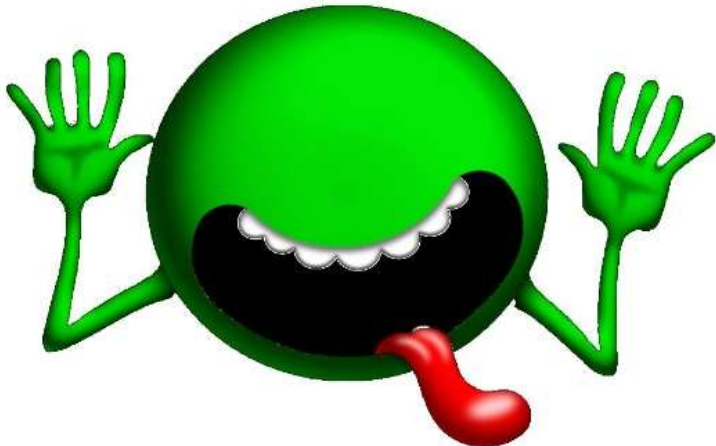


Assess the Prototype

- customer, developers, AFALs and ALAs
- does it work correctly?
- are there risks to deployment?
- do we believe it's ready?
- let's go for Compliance vetting!

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AVP – Compliance Relevancy



A green, round, cartoonish character with a large, open black mouth and a red tongue sticking out. The character has two green arms raised in the air, with fingers spread. The character is positioned in the center of the slide.

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AVP – Compliance Relevancy

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AVP – Compliance Relevancy

We ARE the
Government and
we ARE here to
HELP!

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AVP – The Analytics Vetting Group

The Analytics Vetting Group (AVG) is a chartered cross-Agency group, created for the purpose of providing policy, compliance approval, and guidance for analytics being deployed to NSA's production cloud environments. The group consists of both the AVG board and the Analytic Local Approvers (ALAs) to whom the board extends its authority.

The AVG is a subset of the AVP.

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AVP – The Analytics Vetting Group

AVG Board Members

- The AVG Board consists of subject matter experts from across NSA who adjudicate analytics for compliance relevancy when required by the Analytic Vetting Matrix or when the ALA cannot make a determination
- Voting Board members are selected by their Directorate leadership or designee based on their knowledge of technical, mission, and compliance factors and ability to articulate the equities of each organization at stake in evaluating each analytic
- Chairperson selected from the Compliance Group and serves two years
- In many cases Board Members are also ALAs (cannot represent nor vet their own analytic)
- Serve for at least 30 months, with end of terms staggered on 6 month intervals

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AVP – The Analytics Vetting Group

Analytic Local Approvers (ALA)

- Act as resident POCs for compliance for their organization's analytics. They should be consulted at the inception of an analytic and provide oversight throughout its maturity.
- ALAs have direct access to their Directorate Representative on the AVG board to help answer any questions they may have.
- ALAs act as an extension of the AVG Board for local analytic vetting using the "Analytic Vetting Matrix" to guide their decision process
- All ALAs are appointed by their AVG Directorate representative once training and attendance requirements are met
- All analytics vetted by the AVG must first be vetted locally by their ALA

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AVP + AVG = Compliant Analytics... Well...

- **Analytics Outside the AVP/AVG**

- Analytics that are a part of compliance certified system will subject to the level that the system was certified to
 - Classification
 - Logical Authority Category (LAC)
 - Compliance Functional Controls
- Compliance certification is based on laws, policies, and directives – updated twice yearly

- **Analytics Seen by ALAs/AVG**

- Vetted based on the Analytic Vetting Matrix
 - As an example ALAs approve analytics that process EO12333 data and have active auditing
 - The AVG Board will see analytics after an ALA review but processes FISA data, disseminates and/or releases to Second Parties

Analytics such as JupyterNotebooks, JEMA models and even Excel Spreadsheets are not reviewed as yet...

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AVP – Integrate & Deploy Product Solution



Finalize the Analytic

- *if analytic is approved for deployment...*
- *tweaks will be made based on final determination from ALA or AVG Board*
- *functional portfolio lead approves funding*
- *Technical Analytic Test & Support (TATS) deploys*

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AVP – Integrate & Deploy Product Solution



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AVP – Integrate & Deploy Product Solution



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AVP – Decommission the Analytic



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Streaming Analytics – A Use Case

The vetting process just described works well – analytics come to the board, are evaluated and put into production. A human uses these analytics in the course of their work.

What happens when the analytic performs steps without a human in the loop? How do we ensure compliance?

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Wrap Up & Discussion



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