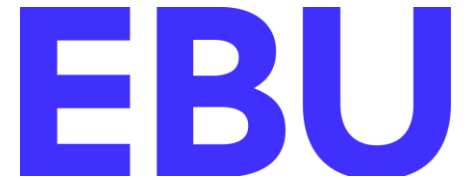


Standards and Specifications

NABA DPP EBU Library Master Format



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Clyde Smith SVP Advanced Technologies FOX NE&O

The Background

What's the **issue**?

- Survey of US members results suggest nothing less than – **AMBIGUITY**
- The Three **Ds**
 - **Deviation** – from Standards
 - **Disparity** – no business value or, we do it because we've always done it!
 - **Divergence** – adding cost to broadcasters and confusion by suppliers

Statement:

*“NABA board decided to address the **ongoing issues** its members constantly have with file based program contribution interoperability”*

The Digital Production Partnership

Background - In the UK

- There is a **single** Air Master specification with a **single** delivery document



- UK File Day **October 1 2014**
 - Over **150 000** AS-11 programs successfully delivered to DPP Broadcaster so far
 - End-of-Tape day announced as October 1 2017 – video tape will be **rejected**

NABA has partnered with the U.K. Digital Production Partnership to **leverage** their success

Standards

The case for **Standards**...

- Absolutely **Essential** for interoperability in File Based Workflows
- Key **Enabler** of the television media ecosystem
- **Address** a large number of use cases for a wide range of users

The **problem** with Standards...

- Have no **specific** Business Owner or Use Case
- Alone are **insufficient** to ensure interoperability in workflows!

The way **forward**...

- NABA, DPP & EBU believe that common Standards **based** Specifications are the solution to **business** driven workflows

The case for Specifications

A Specification **must** have...

- An **agreed** set of constraints based on the relevant **Standards**, required by a user or a user group to implement a specific use case and workflow
- A Business Owner or **champion**...



The case for Specifications

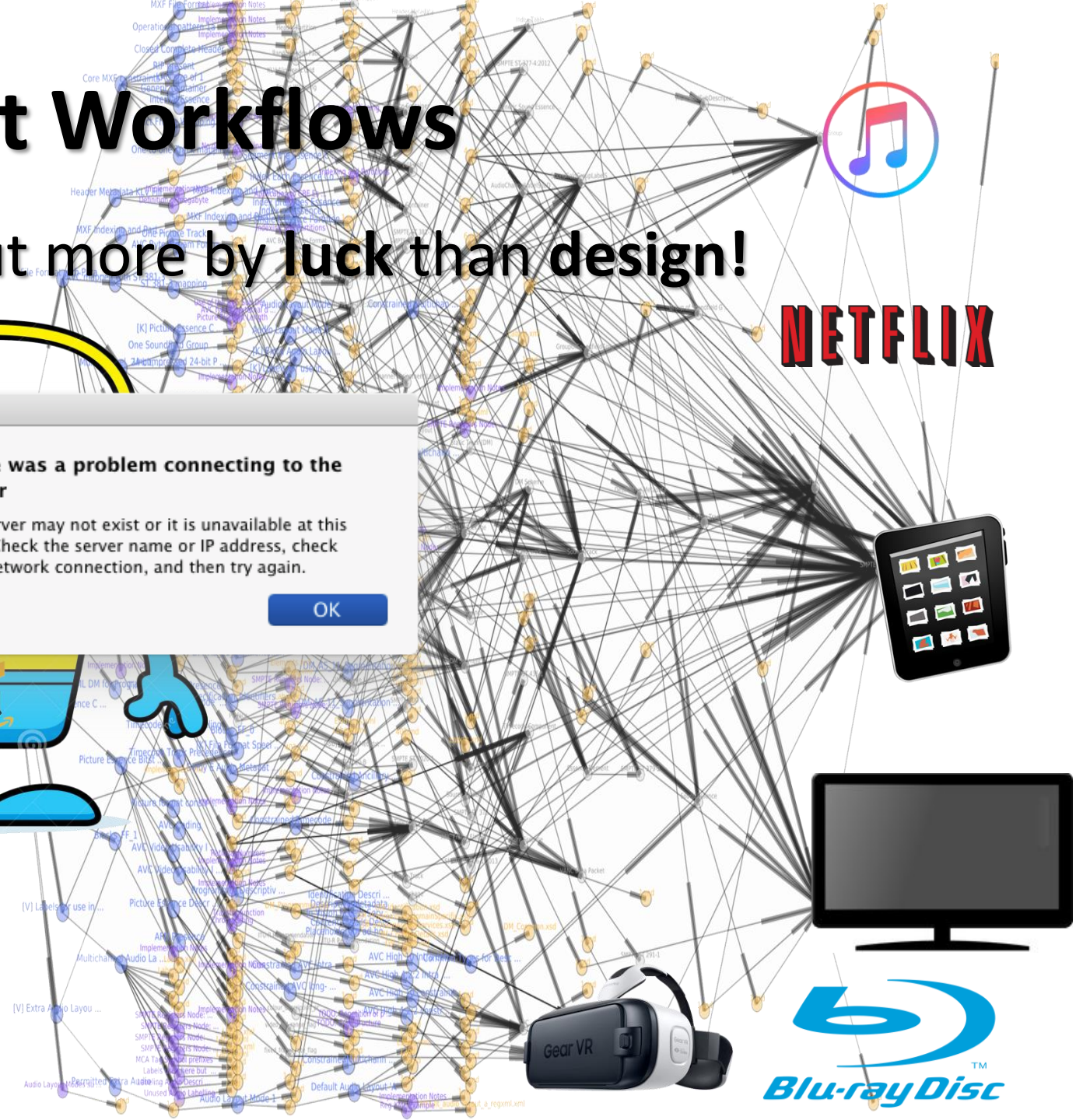
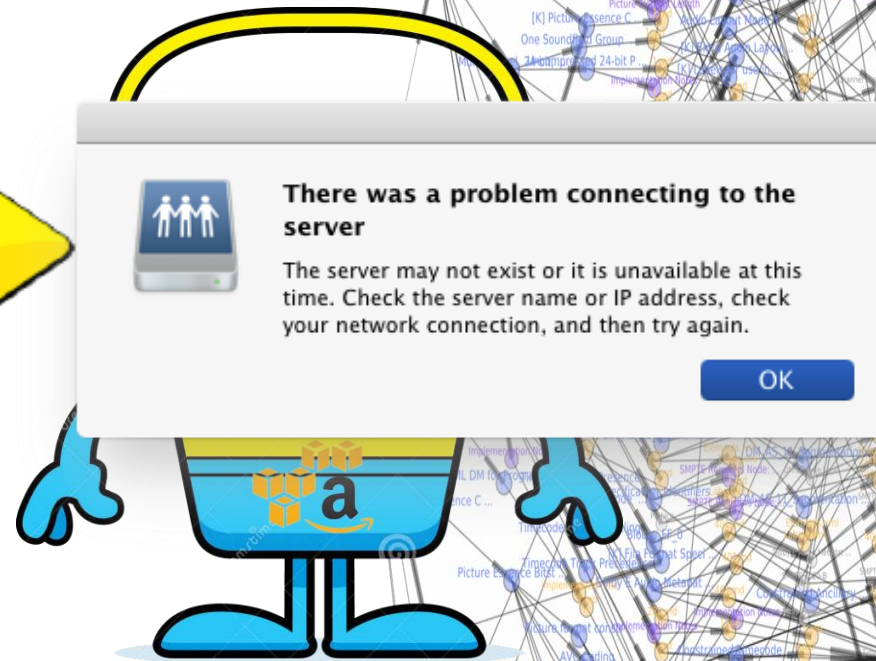
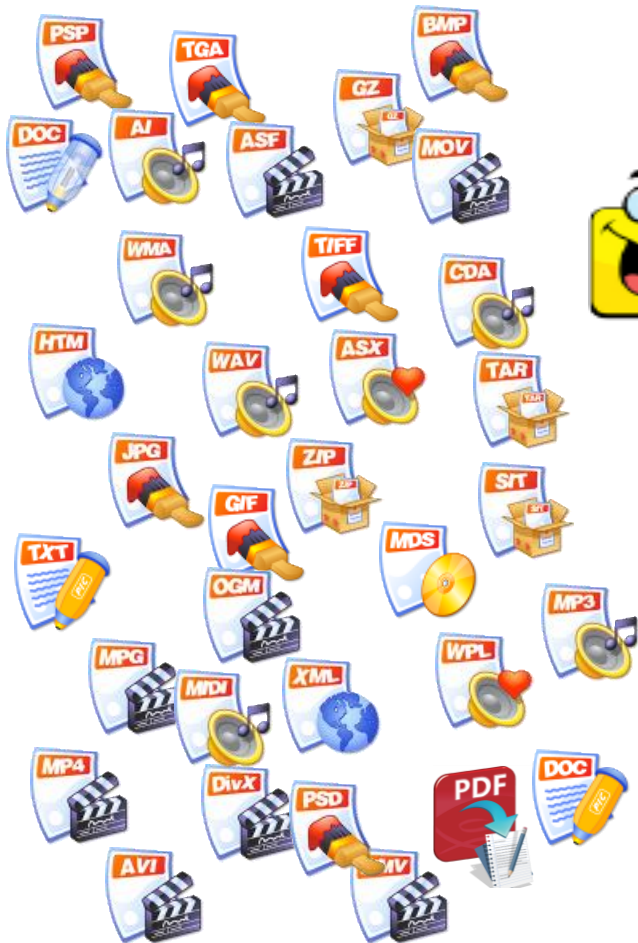
A Specification **must** have...

- An **agreed** set of constraints based on the relevant **Standards**, required by a user or a user group to implement a specific use case and workflow
- A Business Owner or **champion**...
- ...or an established business **user group** e.g. DPP NABA EBU
- When commonly defined and supported, Specifications **eliminate** the need for complex workflows



Current Workflows

What goes in often comes out more by luck than design!



NABA File Delivery Specification

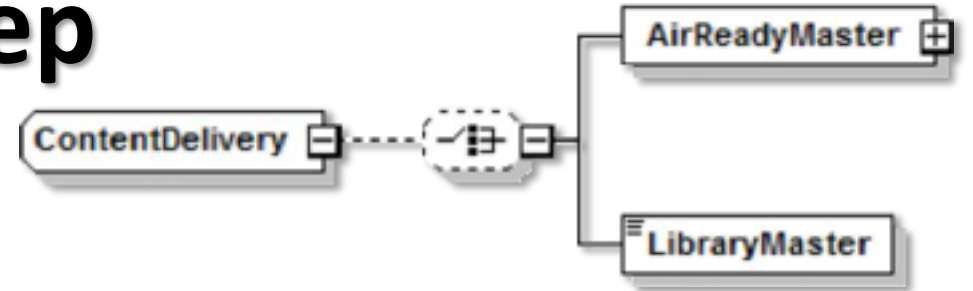
The **NABA Air-Ready Master Specification** has...

- **Common Technical Requirements**
 - Common Broadcaster **Specific Business** and **Production** Requirements
 - **AS-11 X9** for the future and **AS-11 X8** for legacy infrastructure

AS-11 X series is...

- **Rules *NOT* Prose Based**
 - A set of **block-based** rules <http://www.amwa.tv/projects/AS-11.shtml>
 - Contains all Citations & **Operational Modes**
 - Has strong and persistent **Metadata** associations and definitions
 - Is unambiguous, **Standards Compliant** and **Testable**
 - Produces a recognized **Business Value** for each use case

The Next Step



NABA-DPP-EBU Library Masters

- AS-11 file are **flattened** Air Masters
- **IMF** not specifically created for TV program master delivery but...
 - Nothing precludes its use for **TV**
 - Many features will benefit TV and **Commercials** Workflows
- IMF is an enabler of a **unified** television workflow
 - Supports higher **quality** video and extended audio options
 - Has **rich** metadata in XML - vital for current and future distribution
 - Allows HD as well as extended HD and full UHD with **HDR, WCG & HFR**
 - Can contain QC, automation and asset management data in **XML form**
 - Can create **Air Ready Masters** including Metadata (AS-11 X1, X2... X8, X9)

IMF and Broadcasters

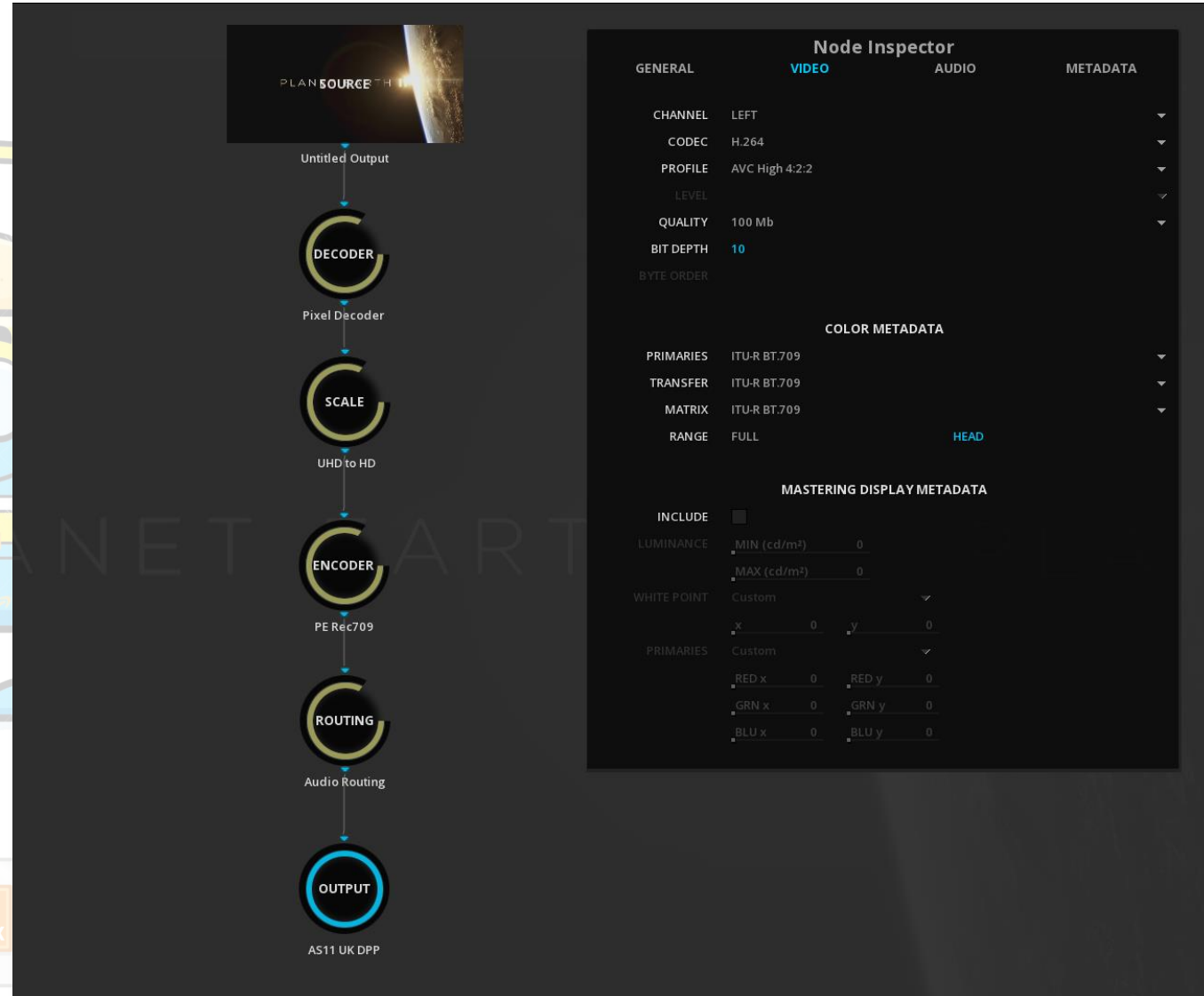
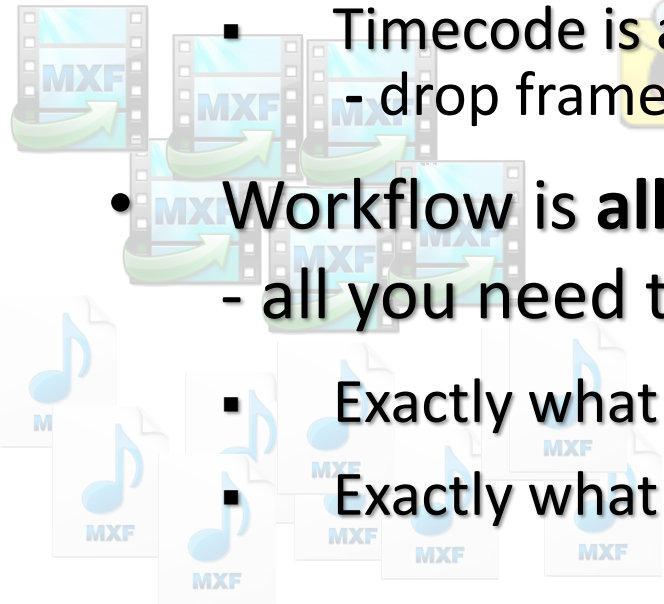
IMF Workflow capabilities meet many if not **all** TV use cases

- **CPLs** support automated editorial versioning for...
 - **Cultural** requirements
 - **Regulatory** requirements
 - **Access Service** and other content specific requirements
- **Sidecar XML** allows inclusion of...
 - **Versions** for Air Master, VOD, international sales etc.
 - **QC data** and certification including captioning
 - Program and Program Version **validation** or **certification**
- **OPLs** support automated technical versioning
 - For **all** output platforms - Air Masters, VoD, Sales, Package Media...

XML Driven Workflows

MXF in XML workflows

- ...the **two** truths
 - Codec is **irrelevant**
 - Timecode is an **illusion**
 - drop frame **doubly** so!
- Workflow is **all** that matter
 - all you need to know is
 - Exactly what you **have**
 - Exactly what is **needed**



EBU.IO/QC and BXF

EBU.IO/QC integration in BXF

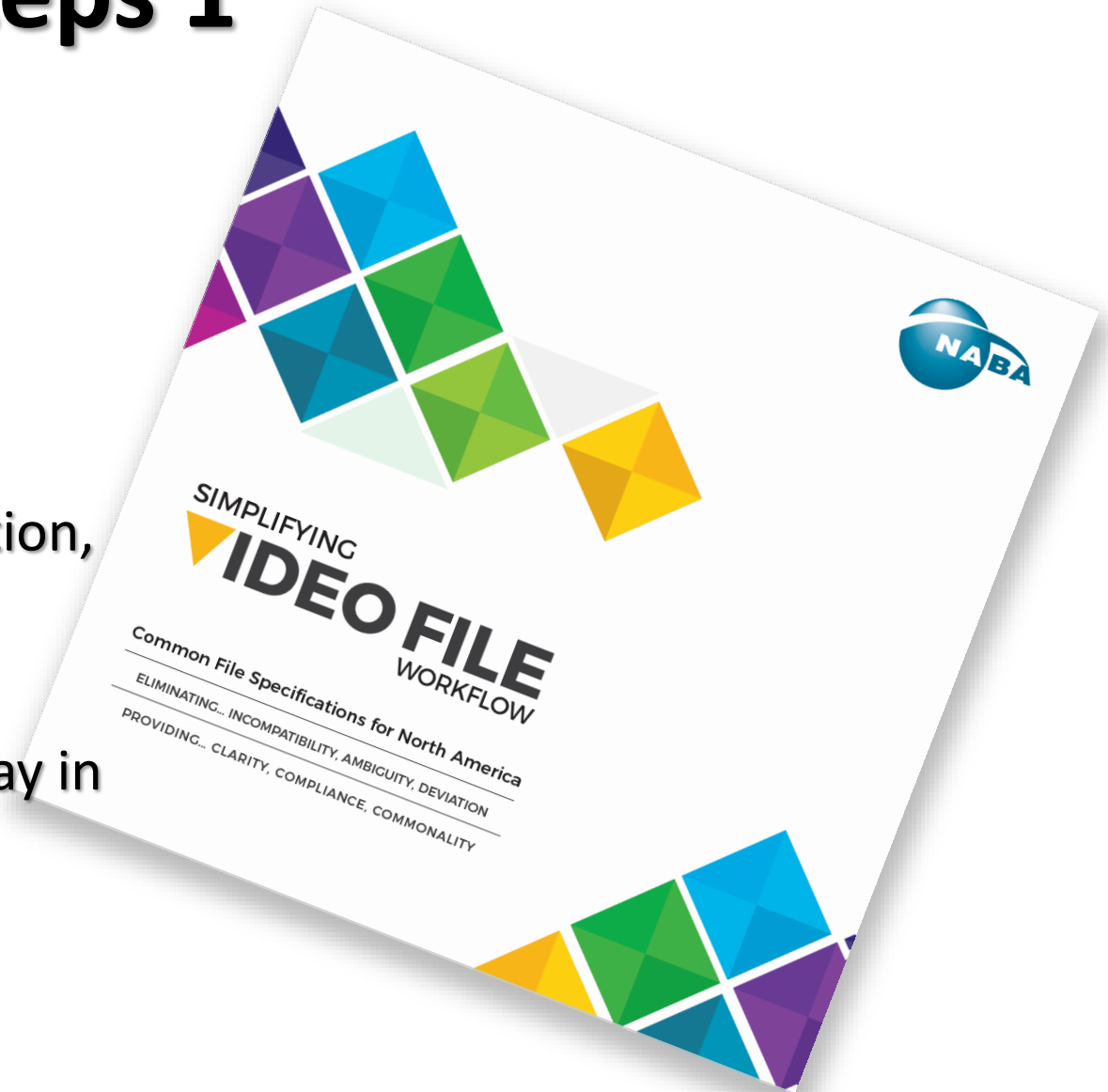
- **Business** system processing of QC reporting
 - Which EBU UID **QC Items** tested
 - What **QC Parameters** used for each item
 - Automated **rejection** reporting and **no touch** acceptance
- **Template** driven QC workflows
 - QC based on **deliverable** requirements, not the content originators
 - **XML QC reports** (EBU Core) for each CPL and Platform
 - **Access Service** QC templates linked to regulation
- EBU QC in **operation** at the BBC since 2014
 - **30 000** successfully delivered files – we haven't QC'd a **single** one!



Next Steps 1

Education

- Education vital for **adoption** and **implementation**
 - Educational materials introduce **specifications** and their implementation, as well as benefits to production, broadcasters and manufactures
 - Educational **Seminars** planned for May in Toronto, New York, Atlanta and LA
 - Make sure **you** have a brochure!



Next Steps 2

Participation

- Your **participation** in the socialization, education and adoption process is critical
 - We welcome your contributions by **joining** and **supporting** NABA & the DPP
 - Your support during discussions with manufacturers, production companies and broadcasters will facilitate the **swift** adoption of these specifications, from which we will all mutually **benefit**



Visit the NABA-DPP Booth



Sponsored by FOX NE&O

Get the information

- Advantages of the DPP-NABA **AS-11** workflow approach.
 - **IMF** and AS-11 for broadcasters Library and Air Masters
 - NABA and the Broadcaster's **migration support**

Prototyping

- Planet Earth II **IMF** trial file
- **ProRes** as MXF - Sidecar XML - ITU-R BT.2100 UHD - Hybrid-Log Gamma
- Producing
 - **AS-11** DPP HD, AS-11 DPP X1 (UHD), AS-11 NABA X8 (HD)
 - **Netflix** IMF - J2K, UHD PQ

NETFLIX

QSS

Photon
Tested

Thank You