ALTIUMLIVE
OVERCOMING PART SELECTION AND SOURCING CHALLENGES WITH ACTIVEBOM

Vincent Mazur
Altium Product Marketing Engineer
Munich
Date: January 16-17, 2019
Outline

1. What is ActiveBOM?
2. Demonstration of Key Capabilities
3. Summary
4. Questions and Answers
What is ActiveBOM?

• A powerful BOM management editor in AD18
• An *alternative* way to look at your design
• Helps designers overcome challenges related to part selection, sourcing and cost
What is ActiveBOM?

Sources

Altium Cloud Services

- NEXUS Managed Parts
- Corporate DB, ERP, PLM, etc.

Outputs

- Draftsman
- BOM Report
- .OutJob
- Custom Extensions Via SDK

ActiveBOM consumes data from Altium libraries and designs. All library types are supported.
Demonstration
Summary

- Variant support (Consolidated View)
- BOM Checks
- Lifecycle indications
- Auto-Solutions with Mfg/Mfg Part #
- Enables early and often monitoring
- Single source of “BOM Truth”
- Little to learn and nothing new to buy:

*ActiveBOM is already part of Altium Designer*
Questions and Answers
ALTIUMLIVE
OVERCOMING PART SELECTION AND SOURCING CHALLENGES WITH ACTIVEBOM

John Watson CID
Legrand/BCS
Senior PCB Engineer

Munich
Date: January 15-17
Component Shortages
This has had a Major Impact for Capacitors
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Multi-Layer Ceramic Capacitors MLCC

Tantalums
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Estimated worldwide production
3,000,000,000,000 3-Trillion
Demand is much greater than supply
MFG have made radical changes
• Discontinued entire part lines
  (Deprecating many of large sizes)
• Certain values have worst supply problems. Example 0.1uf Common
  Bypass Cap Value

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shortages of Tantalite Ore
Component Lead times by MFG & Series
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Not just Capacitors are now being hit

- Board Mount Temperature Sensors
  (~ 5 Week Lead Times)
- Power Switch ICs
  (~ 6 - 10 Week Lead Times)
- MOSFETs
  (~ 26+ Week Lead Times)
- Suppressors / Diodes
  (~ 49 Week Lead Times)
- Operational Amplifiers & Relays
  (~ 52 Week Lead Times)
- Thick / Thin Film Resistors
  (~ 6 to 80 Week Lead Times)
There is no end is sight to the problem...

#1. Expected Growth in the Electronic Industry

According Statista reports:

- **2016**- 1% growth
- **2017**- 4% growth
- **2018**- 4% growth
- **2019**- 6% Growth
- **2020**- 8% Growth

This is ALL great news for our industry
There is no end in sight to the problem...

#2 - Allocation
There is no end in sight to the problem...

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- More components are going into Allocation: (Rationing) Component MFG are dividing the available inventory only a percentage of the stock to specific manufacturers.
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- Worsened by those companies issue by double- and triple-booking orders.
Million Dollar Question- WHY?
What is driving this Crisis?
Internet of Things (IOT) Sector

There's been an explosion in the demand for smart devices - from Smart TVs, Bluetooth speaker systems, Amazon Alexa and Googlehome to renewable energy products, solar panels and Cloud Computing.
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According to Gartner, there will be more than 20 billion IoT devices deployed by 2020 which will be a 100 percent growth in the number of these devices in the next two years.
What is driving this Crisis?
Internet of Things (IOT) Sector

THE INTERNET OF THINGS
IoT is relevant to all of us

Will not be a single area of our lives not affected by IOT
What is driving this Crisis?
Mobile Phone Sector
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- Huge increase in personal phone usage
- Have doubled since the release of the S6 by Samsung in April 2015.
- Ancient History: Land Lines
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Approximately 1.5 billion smart phones manufactured per year and each flagship model contains roughly 1,000 capacitors.

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That means that nearly 50% of the MLCC are used strictly in the Mobile cell phone sector alone.
What is driving this Crisis?
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What is driving this Crisis? Automotive Sector

- **Double Digit Growth**
  - In only four markets for Hybrid and fully Electric vehicles have seen huge increases.
  - Impacted also the Gasoline vehicles with the addition of new technologies in automation of via automated driving systems (ADS).
  
  All the new automated gadgets such as parking sensors and auto windscreen wipers.
What is driving this Crisis? AUTOMOTIVE SECTOR

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  A standard combustion engine car, has somewhere between **2,000 to 3,000 capacitors**.

  An electric vehicle has up to **22,000 MLCCs** required in a single car.
What is driving this Crisis? Automotive Sector

- Special Situation with Required Components
  - The higher temperatures inside the control circuits of electric vehicles mean that traditional plastic film capacitors are no longer suitable so ceramic MLCCs are increasingly being used.
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  An organization that promotes the standardization of reliability or qualification standards for automotive electronic components including high-temperature/high-humidity resistance, thermal shock resistance, and durability.
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- **List of standards for Electronic Parts**
  - **AEC-Q100**: Integrated circuits (ICs)
  - **AEC-Q101**: Discrete semiconductor components (transistors, diodes, etc.)
  - **AEC-Q200**: Passive components (capacitors, inductors, etc.)
What is driving this Crisis?
Automotive Sector

Outcome

• Manufacturers are scrambling to get compliant

• Many of the initial components failed compliance testing.

• All this has led to a five-fold increase in the demand for electronic components
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• Will only be increasing with the next “big thing” hitting the industry with interconnecting of Cars
What does all this mean for us?

Not going to be business as usual
One Option will be......
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Not going to be business as usual
One Option will be......

Everything is juuuuuuuust FINE
Strategy for Success through this Crisis
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By failing to prepare, you are preparing to fail.

~ Benjamin Franklin
Strategy for Success through this Crisis

- 3- “P” of getting through this crisis
  PLAN, PREPARE, BE PROACTIVE

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- Don’t start with a design that is already in trouble
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- **Knowledge is Power now more than ever**
  - Have “LIVE” Component Stock availability information
  - Appropriate and approved AVL.
  - Ability to Rank Vendors
  - Multiple Sources and Vendors for each Component

---

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Most Important.... Use the Best Tool for the Job
Strategy for Success through this Crisis

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ALL that is needed is

Altium ActiveBOM