

# BOM Import Agent - User Guide

## <b>Overview</b>

The **BOM Import Agent** is a **Task Assistant Agent** within the **InnovatorEdge AI** framework. It enriches the digital thread by transforming Bill of Materials (BOM) data contained in engineering spreadsheets into structured, governed Items within **Aras Product Engineering (PE)**.

## <b>What the BOM Import Agent Does</b>

The agent operates directly inside the system of record to normalize incoming supplier data. Its purpose is to:

- Extract part metadata and hierarchical relationships from Excel files.
- Convert unstructured or semi-structured spreadsheet rows into governed **Part** and **Part BOM** Items.
- Reduce manual transcription effort for large, multi-level structures.
- Establish traceability by linking imported items to the authoritative digital thread.

The agent is user-invoked and human-validated. No data is committed to Aras Innovator until the user confirms the import summary.

## <b>Preparing the Document for Import</b>

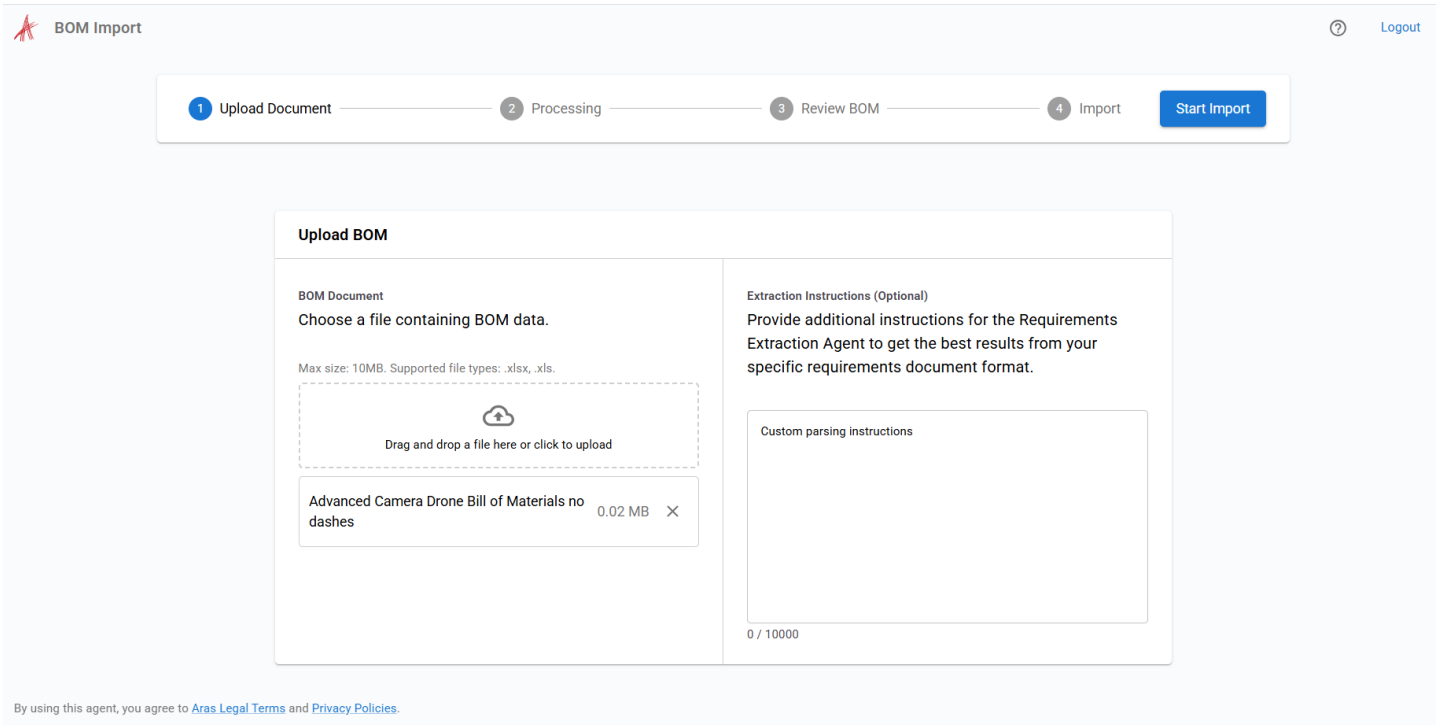
The quality of extraction depends on the structural conventions of the source Excel file. The agent analyzes:

- **Hierarchy Indicators:** Single-column leveling (1, 1.1) or stair-step indentation across columns.
- **Property Labels:** Header rows defining Part Numbers, Names, and Quantities.
- **Metadata Consistency:** Use of consistent units of measure and procurement types.

## Constraints:

- **Format:** Supports a single **.xlsx** file.
- **Size:** Maximum file size is **10 MB**.
- **Structure:** The file must define exactly one **Root (Level-0) Part**.





**BOM Import**

1 Upload Document — 2 Processing — 3 Review BOM — 4 Import **Start Import**

### Upload BOM

**BOM Document**

Choose a file containing BOM data.

Max size: 10MB. Supported file types: .xlsx, .xls.

Drag and drop a file here or click to upload

Advanced Camera Drone Bill of Materials no dashes

0.02 MB ×

**Extraction Instructions (Optional)**

Provide additional instructions for the Requirements Extraction Agent to get the best results from your specific requirements document format.

Custom parsing instructions

0 / 10000

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## <b>BOM Agent Instructions - Defining Mapping Rules</b>

Agent Instructions configure how the AI interprets specific spreadsheet columns. These apply globally across the document during the ingestion phase.

Users can provide natural language rules to align source data with the Aras Data Model:

- **Mapping Example:** *"Map 'Assembly Identification' column values to 'Name' Part property;"*
- **Mapping Example:** *"Map 'Actual' column values both to Part and BOM 'Status' properties."*

## <b>What the Agent Extracts</b>

During extraction, the agent identifies and segments the following content:

- **Part Metadata:** Unique identifiers (item\_number), names, and descriptions.
- **BOM Relationships:** Parent-child links (source\_id to related\_id), quantities, and find numbers.
- **Graphics:** Embedded images are identified and prepared for import as **Part Thumbnails**.



 BOM Import? [Logout](#)

1 Upload Document

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Start Import

Upload BOM

Uploaded BOM is being processed. This may take a few moments depending on the document size and complexity.

Uploading...

Advanced Camera Drone Bill of Materials no dashes0.02 MB



Please wait: Closing this window or navigating away during this process will cancel the upload and discard all extracted BOM data

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## <b>Validating Extracted BOM Structures</b>

After extraction, the agent presents a structured **Tree Preview** for review. This phase allows engineers to apply domain expertise before system commitment:

- **Hierarchical Search:** Filter and highlight text across thousands of rows to verify critical items.
- **Inline Editing:** Modify editable properties (Description, Quantity) directly in the grid.
- **Visual Review:** Verify extracted thumbnails against part descriptions.



 BOM Import

Upload Document

Processing

Review BOM

Import

Import to Innovator

New Import

Search

| TYPE | DESCRIPTION               | PART NUMBER | NAME                   |
|------|---------------------------|-------------|------------------------|
| ▼ -  | Master Top-Level Assembly | 100-0000    | Pro Camera Drone       |
| ▼ -  | Main Structural Frame     | 200-0100    | Airframe Assembly      |
| -    | 3mm Carbon Fiber Base     | 300-0110    | Carbon Chassis         |
| ▼ -  | Pre-built Motor & Arm     | 300-0120    | Motor Arm Assy         |
| -    | 15mm Carbon Fiber Tube    | 400-0121    | Arm Tube               |
| ▼ -  | 2207 Stator Motor         | 400-0122    | Brushless Motor Assy   |
| -    | Laminated Steel Core      | 500-0123    | Motor Stator           |
| -    | 24AWG Enamel Wire         | 500-0124    | Copper Winding Coil    |
| -    | NS2 Curved Magnets        | 500-0125    | Neodymium Magnets      |
| -    | ABEC-7 Steel Bearing      | 500-0126    | Motor Bearings         |
| ▼ -  | Electronic Speed Control  | 400-0127    | ESC PCBA               |
| -    | 4-Layer 2oz Copper        | 500-0200    | ESC Bare Board         |
| -    | N-Channel 40V 100A        | 500-0201    | Power MOSFETs          |
| -    | 32-bit Motor MCU          | 500-0202    | ESC Controller IC      |
| -    | 470uF 35V Electrolytic    | 500-0203    | Power Capacitors       |
| -    | 1k Ohm 1% 0402            | 500-0204    | SMD Resistors          |
| ▼ -  | Central Processing Unit   | 200-0200    | Main Avionics Module   |
| -    | Aluminum Heatsink Case    | 300-0210    | Avionics Housing       |
| ▼ -  | Main Drone Motherboard    | 300-0220    | Flight Controller PCBA |
| -    | 6-Layer High-Density      | 400-0221    | FC Bare Board          |

PART PROPERTIES

Id

88CBA61DE1F643D4A123F20725DC9359

Type

Cost

Description

Main Structural Frame

Part Number

200-0100

Keyed Name

Name

Airframe Assembly

Thumbnail

Managed By Id

BOM RELATIONSHIP

Id

2500D39E252941809A5D8974EEC82FB9

Quantity

1

Source Id

2A553F8DFBC7427293C686FB376CACB0

Related Id

88CBA61DE1F643D4A123F20725DC9359

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**Importing into Aras Innovator**

Once validation is complete, the agent executes an atomic import sequence:

1. **Part Creation:** Creates all new Part items identified in the structure.

2. **Relationship Binding:** Establishes the Part BOM links using the verified hierarchy.

3. **Thumbnail Upload:** Attaches extracted graphics to Part records.

**Important**

The agent is optimized to **Create New Parts** only. It does not automatically update existing parts in the system. Upon success, a direct link to the **Root Part** is displayed.

✓ Upload Document — Processing — ✓ Review BOM — 4 Import

#### Uploading to Innovator

Your BOM is being imported to Aras Innovator. This may take a few moments.

Submitting 49 part(s) in a single request...

Advanced Camera Drone Bill of Materials no  
dashes

49 Parts and 48 Part\_BOM relationships to import



Please wait: Closing this window or navigating away during this process will cancel the upload and discard all extracted BOM data.

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The screenshot displays the Aras Innovator web application. On the left is a navigation menu with options like Administration, Change Management, Design, Documents, Extended Classification, My Innovator, Portfolio, Sourcing, and Variant Management. The main area shows the 'Part' form for part number 100-0000. The form includes fields for Name (Pro Camera Drone), Type, Unit (EA), Make / Buy (Make), Cost, Effective Date, and Long Description (Master Top-Level Assembly). Below the form is a tabbed interface with 'BOM Structure' selected. This tab shows a hierarchical Bill of Materials table.

| Part Number | Rev. | State       | Sequence | Quantity | Claimed By | Name               | Effectivity | Reference De... |
|-------------|------|-------------|----------|----------|------------|--------------------|-------------|-----------------|
| 200-0300    | A    | Preliminary | 384      | 1        |            | Camera Gimbal Assy |             |                 |
| 300-0310    | A    | Preliminary | 128      | 1        |            | Gimbal Frame       |             |                 |
| 300-0320    | A    | Preliminary | 256      | 1        |            | Pitch Motor        |             |                 |
| 300-0330    | A    | Preliminary | 384      | 1        |            | Roll Motor         |             |                 |
| 300-0340    | A    | Preliminary | 512      | 1        |            | Yaw Motor          |             |                 |
| 300-0350    | A    | Preliminary | 640      | 1        |            | Camera Module      |             |                 |
| 400-0351    | A    | Preliminary | 128      | 1        |            | Lens Assembly      |             |                 |
| 400-0352    | A    | Preliminary | 256      | 1        |            | Image Sensor PCBA  |             |                 |
| 500-0400    | A    | Preliminary | 128      | 1        |            | Sensor Bare PCB    |             |                 |
| 500-0401    | A    | Preliminary | 256      | 1        |            | CMOS Sensor        |             |                 |
| 500-0402    | A    | Preliminary | 384      | 1        |            | Image Processor IC |             |                 |
| 500-0403    | A    | Preliminary | 512      | 300      |            | Passives (R, C, L) |             |                 |
| 200-0400    | A    | Preliminary | 512      | 1        |            | Battery Pack Assy  |             |                 |
| 300-0410    | A    | Preliminary | 128      | 4        |            | Li-Po Cell         |             |                 |
| 300-0420    | A    | Preliminary | 256      | 1        |            | BMS PCBA           |             |                 |
| 200-0500    | A    | Preliminary | 640      | 17       |            | Main Fastener Kit  |             |                 |

Clicking the Root Part link opens the standard Aras Innovator interface. Here, you can see the **Part Form** populated with the name, description, and thumbnail extracted by the agent.

Navigate to the **BOM Structure** tab on the Part record to view the multi-level hierarchy as it exists in the system of record. Every link, quantity, and sequence created by the agent is now part of the authoritative product record.

## <b>Guidelines & Best Practices</b>

- **Review AI Confidence:** Pay close attention to items where data was semi-structured via custom instructions.
- **Human-in-the-Loop:** All AI-generated outputs must be reviewed by a qualified engineer before system commitment.



- **Resolution Mode:** Ensure you are logged in correctly; your import will respect your native Aras Innovator permissions.

