National Defense-ISAC
Securing Small Business Manufacturing Supply Chain Resource Handbook
April 2023

Tailored for the build-to-print defense contractor environment with use cases relevant to forging houses, manufacturers, and the finishing supply chain

ND-ISAC
National Defense Information Sharing and Analysis Center
Resource available on ND-ISAC’s website

SECURING SMALL BUSINESS MANUFACTURING SUPPLY CHAIN RESOURCE HANDBOOK
TAILORED FOR THE BUILD-TO-PRINT DEFENSE CONTRACTOR ENVIRONMENT WITH USE CASES RELEVANT TO FORGING HOUSES, MANUFACTURERS, AND FINISHING SUPPLY CHAIN

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EXECUTIVE SUMMARY

The National Defense Information Sharing and Analysis Center™ (ND-ISAC™) Small & Medium Business (SMB) Working Group is focused on sharing best practices to overcome resource-constraint challenges that many SMBs face. There are a variety of resources available to support small business cybersecurity implementation. For example, there is U.S. Government-funded research that explores challenges and solutions among small Defense Industrial Base (DIB) software development firms and white papers that offer SMB methods to engineer network segmentation. However, there are limited resources developed by DIB small business manufacturers that document common challenges for small businesses. This product illustrates real-world scenarios in the build-to-print defense contractor environment with use cases relevant to forging houses, manufacturers, and the finishing supply chain. As part of this the document amplifies specific and common challenges, and describes the risks that impact both the small business and the larger supply chain.

This product was developed for two primary groups of stakeholders:

1. **U.S. Government Personnel and large Prime Contractors** -- to explain common scenarios these stakeholders may not be aware of that impact security guidelines and requirements.

2. **Small businesses operating in the manufacturing supply chain** -- to offer practical steps both in immediate actions and long-term strategic planning to secure data and minimize risk.

The ND-ISAC SMB Working Group believes that broadened understanding of these challenges will enable more effective solutions.

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There’s always a disclaimer, right?
If we track the workflow in a manufacturing environment, it is easy to trace the data flow.
U.S. Government (e.g. - DoD) places order with Prime or SMB direct

Prime subcontracts to SMB

Build-to-print Manufacturer (SMB) receives order

Materials and parts are ordered by SMB

Manufacturing operations take place at SMB

Third Party Source Inspection (at SMB)

Completed parts are shipped back to SMB; SMB finishes part marking, assembly, etc.

Parts complete and ready to ship from SMB.

SMB subcontracts after manufacture processing work to finishing house

Parts shipped via shipping carrier

Customer’s Ship-To Destination (Prime’s address, Government’s address, or Drop-Ship Location)
U.S. Government (e.g. - DoD) places order with Prime or SMB direct

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U.S. Government (e.g. - DoD) places order with Prime or SMB direct

Prime subcontracted to SMB

Build-to-print Manufacturer (SMB) receives order

Materials and parts are ordered by SMB

Third Party Source Inspection (at SMB)

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Parts shipped via shipping carrier

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U.S. Government (e.g. DoD) places order with Prime or SMB direct

Prime contracts to SMB

Build-to-print Manufacturer (SMB) receives order

Materials and parts are ordered by SMB

Third Party Source Inspection (at SMB)

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SMB subcontracts after-manufacture processing work to finishing house

Manufacturing operations take place at SMB
Layout of Handbook –
Scenarios and Best Practice Suggestions

• Describe specific situation
• So, what’s the problem (…and the risk)?
• What to do about it NOW and SOON
• Why mitigating the risk matters to the supply chain
2.1 Scenario – Unnecessary Administrative Access
More common situations in a SMB manufacturing environment that introduce risk:

1. Outdated operating systems due to machine (OT) compatibility
2. The use of USB flash drives on a shop floor
3. Sharing data with Tier 2, 3, 4…
SMB Manufacturers Have:

1. **Limited resources** (dollars, time, and people)
2. **Expertise in their industry**: Manufactured product (not IT and cybersecurity)
3. **Existing proven business processes** that have worked for YEARS (if it’s not broken – don’t fix it!)
Handbook also includes...

APPENDIX A – Acronym & Agency Guide
APPENDIX B – Resource List of Topical Guides
Next Steps
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