| COMMENT **#** | **SOURCE** | **TYPE**  **i.e.,**  **Editorial**  **Minor**  **Major** | **LINE #**  **PAGE**  **etc.** | **RATIONALE for CHANGE** | **PROPOSED CHANGE**  **(specific replacement text, figure, etc. is required)** |
| --- | --- | --- | --- | --- | --- |
| 1 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 147 | Clarity | “The *[“proliferation and”-delete]* increased… |
| 2 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 148 | Clarity | “ubiquity of IoT components and systems *[“are likely to’-delete]* heighten the risks they present.” |
| 3 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 151 | Clarity | “Through analysis of the application areas [*we show that – add*] cybersecurity for IoT is unique and [*will-delete]* require*s* tailoring of existing standards, as well as, creation of new standards to address…” |
| 4 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 153 | Make impact on end users and systems explicit; key idea | Change to:” environment, and related *end user and system* safety.” |
| 5 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 154 | Clarity | Change to: “Using this foundation, this Report…” |
| 6 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 155 | Clarity | Change to: “cybersecurity. This analysis is based on the information in Annex D,…” |
| 7 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 156 | Clarity | Change to: “…core areas. The annotated standards listings in…” |
| 8 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 157/158 | Clarity | Change to: “…effort to identify those that apply to IoT cybersecurity.” |
| 9 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 158-161 | Clarity | “The market impact and security gaps in using existing standards for IoT cybersecurity are identified. Annex D is a snapshot in time and is a point of departure for maintaining awareness of the evolving IoT standards landscape.” |
| 10 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 161-162 | Concrete examples | “...the five examples of IoT applications: Connected Vehicle, Consumer, Health, Smart Buildings, and Smart Manufacturing, are provided in Table 4…” |
| 11 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 164-165 | Clarity | “The conclusions focus on IoT cybersecurity standards gap and effective use of existing standards.” |
| 12 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | p. 33-45 | Putting objectives, risks, and threats prior discussing IoT cybersecurity areas provides context for the discussion. Improves the logical flow. | Move section 7 in front of section 6 |
| 13 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 252-255 | Flow of key ideas | “The Internet of Things (IoT) has already changed the world for individuals, as consumers and citizens, as well as for governments and industry. IoT is expected to provide more revolutionary capability become more ubiquitous. Yet this adoption of IoT brings cybersecurity risks that pose a significant threat to the Nation.” |
| 14 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 310 | Clarity | “describes several representative IoT applications” |
| 15 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 321-322 | Clarity | “reasons. They include: the cross-cutting domains of application of IoT; the multitude…” |
| 16 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 348 | Definition consistency | “Of these capabilities networking and network interface are required capabilities, as are security features contained in supporting capabilities.” |
| 17 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 355 | Ackoff’s definition makes the point that the whole derives its characteristics from the interaction of the parts to achieve a goal. | “A system is a whole whose characteristics derive out of the interactions of its parts. Not the actions of its parts taken separately, it's the way the parts interact (Russell Ackoff).” The characteristics of the whole enable the achievement of goals that cannot be achieved by the parts alone.  <http://www.open.edu/openlearn/money-management/management/leadership-and-management/managing/systems-explained-russell-ackoff> |
| 18 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | Figure 2/p. 6 | Provide context for IoT consistent and traceable to risk tiered hierarchy. | Recommend mapping IoT architecture to Tiered hierarchy shown in Figure 2-1, p. 5, of NIST SP 800-37. |
| 19 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | Footnote (3)/p. 6 | Typo | “See Annex B Table 5: IoT Primary Capabilities Table.” |
| 20 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 526 | Make the connection for most readers who do not know what “sous vide” means | “Examples include sous vide machines, which use a method of cooking food under vacuum in steam or water bath, that can be remotely programmed and monitored, and …” |
| 21 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | Table 1/p.14 | Missing stakeholders  Missing regulations and laws – constrains how things will work | Add: “Regulators” and “Equipment Manufacturers” to ”People”  Add: Examples of regulations and laws – as these will constraint how components interact. |
| 22 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | Figure 6/p.15 | Figure missing information and components referenced in text. | Add embedded figure. |
| 23 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 614 & 635 | Incorrect figure reference + missing figure for 614 | 635: “Nutrition and Allergen Control (See Figure 7)” |
| 24 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | p. 16 | Missing Figure for Diabetes Treatment – Alerts and Dosage | Add embedded figure. |
| 25 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | Table 2/p.17 | Consistency with text | Change “Infrastructure” to “Managed Infrastructure” |
| 26 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | Table 2/p.17 | Consistent with text | Under “Sensing”  “Light (On/Off/Settings)”  “Door (Open/Closed) |
| 27 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | Table 2/p.17 | Consistent with text | Add: “Facility Manager” to “People” |
| 28 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | Table 2/p.17 | Consistent with model developed in Figure 2 | Re-organize “Computing” elements under sub-categories: “Data Storing”; “Networking”; and “Processing” |
| 29 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 677 | Correct direction of temperature | “”…increase the temperature and lighting in their area. The system receives this feedback and…” |
| 30 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 731 | Examples will clarify what we mean | “through all points of production. However, the volume of unstructured data e.g. emails, blogs, web pages, etc. that could be” |
| 31 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | Section 6 | Re-organization for more logical flow. | 6.1 Information Security Management Systems (ISMS)  6.2 System Security Engineering  6.3 Cryptographic Techniques  6.4 Identity and Access Management  6.5 Network Security  6.6 Software Assurance  6.7 Hardware Assurance  6.8 Supply Chain Risk Management (SCRM)  6.9 IT System Security Evaluation  6.10 Security Automation and Continuous Monitoring (SACM)  6.11 Cyber Incident Management |
| 32 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 900 | Add system assurance standard and guidebook for completeness. | NATO AEP-67, Engineering for System Assurance on NATO Programmes  <http://nso.nato.int/nso/zPublic/ap/PROM/AEP-67%20EDB%20V1%20E.pdf>  NDIA Engineering for System Assurance  <https://www.ndia.org/-/media/sites/ndia/meetings-and-events/3187-sullivan/divisions/systems-engineering/sse-committee/systems-assurance-guidebook.ashx?la=en> |
| 33 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1152 | Completeness | Add the following:  ISO/IEC 15026-2:2011, Systems and software engineering – Systems and software assurance - Part 2: Assurance case  ISO/IEC 15026-4:2012, Systems and software engineering – Systems and software assurance – Part 4: Assurance in the life cycle  NATO AEP-67, Engineering for System Assurance on NATO Programmes  <http://nso.nato.int/nso/zPublic/ap/PROM/AEP-67%20EDB%20V1%20E.pdf>  NDIA Engineering for System Assurance  <https://www.ndia.org/-/media/sites/ndia/meetings-and-events/3187-sullivan/divisions/systems-engineering/sse-committee/systems-assurance-guidebook.ashx?la=en> |
| 34 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 1227 | The NDIA SA Guidebook and NATO AEP-67 are two separate documents. | NATO AEP-67, Engineering for System Assurance on NATO Programmes  <http://nso.nato.int/nso/zPublic/ap/PROM/AEP-67%20EDB%20V1%20E.pdf>  NDIA Engineering for System Assurance  <https://www.ndia.org/-/media/sites/ndia/meetings-and-events/3187-sullivan/divisions/systems-engineering/sse-committee/systems-assurance-guidebook.ashx?la=en> |
| 35 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 1254 – 1257 | Clarity/revise as provided. | “In addition to traditional focus on confidentiality, integrity, and availability, IoT security needs to address threats to people, their objects, and their environments, because IoT components interact with the physical world through sensors and actuators.” |
| 36 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1259-1260 | Clarity | “IoT components, being Internet Protocol (IP) based can connect to the Internet and may also be deployed in stand-alone IP networks that are not connected to the Internet.” |
| 37 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1262 | Consistency/uppercase “T” for Things | “…taken by Things.” |
| 38 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1283- 1284 | Clarity | “Evolutions in system security engineering approaches can aid in the challenge of reducing susceptibility of systems to a variety of simple, complex, and hybrid threats including physical…” |
| 39 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 1286-1288 | Repeated concept/sentence | Delete sentence “One ongoing challenge is to ….omission and commission.” |
| 40 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1288-1290 | Clarity | “This reduction in susceptibility is accomplished by understanding stakeholder protection needs, and employing sound security design principles and concepts, throughout the system life cycle.” |
| 41 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1295 | Consistency | “…gateways, a demilitarized zone (DMZ) network…” |
| 42 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1412 | Consistency/section discusses threats and vulnerabilities | “Threats and Vulnerabilities” |
| 43 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1423 | Flow | “Additional threats include:” |
| 44 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1432-1433 | Flow of idea | “The heavy push towards automated, or “self-driving,” vehicles must also include an equivalent push for fault tolerant and fail-safe designs that adapt to the dynamic networks.” |
| 45 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Editorial | 1528 | Consistency/section discusses threats and vulnerabilities | “Threats and Vulnerabilities” |
| 46 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 1581-1589 | Section is titled “Threats” but includes vulnerabilities and consequences. Recommend retitle and differentiate threats [T], vulnerabilities [V], and Consequence [C] or Impact [I] | “Threats and Vulnerabilities” + recommendation under rationale. |
| 47 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 1618-1619 | Correcting the idea – there are many IoT systems which means there are many targets for threats. See comment for 1581-1589 as well as it applies here. | “Smart building systems use many IoT systems which increases the number of potential threats, such as:” |
| 48 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 1682 | We can safely assume whoever paid for an IoT component can be considered the “owner.” Using unique part information and good CM practices may alleviate this issue. | “…and this may make it difficult to determine the owner.” |
| 49 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Major | 2026 | Concept clarity. Vulnerabilities in software are exploited by threats. Software assurance checks for vulnerabilities which once identified can be removed. | “Software Assurance: best practices for avoiding vulnerabilities in software that can be exploited by threats e.g. malware.” |
| 50 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | 2129-2130 | Clarity of concept/consistency with Table 5. | “This table provides general details about the types of Atomic IoT including their primary capability, inputs, transformations (functions), outputs, and operational assumptions.” |
| 51 | [Arif Dhanidina](https://www.youracclaim.com/badges/a3d68002-9882-4b76-b2a3-9e8a698e4e2f/public_url) | Minor | Table 5 | Consistency with description. | “Transform (Function)” |