GE Aerospace

GE Aerospace remains committed to ensuring safe air travel throughout the world, including the use of AI to maximize safety, quality, and delivery speed of its goods and services in a fair and compliant manor in all circumstances. Accordingly, GE Aerospace supports NIST's efforts to provide a consistent risk and measurement framework across industries while also allowing the regulatory agencies closest to each industry the ability to foster innovation while appropriately managing industry-specific risks.

Regarding Section 1.a., GE Aerospace remains committed to NIST AI 100–1 and welcomes continued discussion for the refinement of the Risk Management Framework (RMF). No substantive changes are recommended for the RMF in regard to generative AI, as the overall evaluative approach encapsulates systemic application risks seen as arising from any AI methodology, including using generative AI in those applications.

Regarding Section 1.b. and E.O. 14110 Section 4.1(a)(ii), GE Aerospace specifically notes the need for ensuring the evaluation of cybersecurity as it relates to AI utilization within the scope of red-teaming efforts. This includes at least:

- Secure development life cycle processes such as change and version control
- Secure code delivery
- Secure coding rules
- Static Application Security Testing
- Dynamic Application Security Testing
- Secure storage of source code, training data, and models

Such evaluations should include the potential use of penetration testing or other "white hat" activities designed to simulate anticipated actions that may be taken during development and deployment of an AI system.

Regarding Section 2.a. and E.O. 14110 Section 4.5(a), GE Aerospace currently and has in future plans only uses of synthetic data which will be viewed, evaluated, (if necessary) modified, and released by a human subject matter expert. That subject matter expert will be trained in both the completion of any associated tasks with and without the availability of the generative AI system that is creating synthetic data. Due to the criticality of aerospace infrastructure decision-making, it is GE Aerospace's stance that unsupervised use of synthetic data – internal or external – is not acceptable in the aerospace domain. Corporate training is currently being updated to reflect this need across the entire enterprise, and it is recommended that NIST encourage a similar stance with regard to other industries where the introduction of inaccurate or imprecise synthetic data poses a potential for concern in subsequent safety- and efficiency-critical decision-making.

An example of one such system is a manufacturing inspection system, where manufactured parts must be checked for conformance and compliance prior to acceptance. In many infrastructure domains, analogous systems may make use of synthetic data for bootstrapping (development of a system with reduced available real

part data) and/or optimization and robustification (emphasis of evaluative features in decision-making tools with supplemental “what if” scenario data). While these are important and highly valuable activities for efficiency and performance improvements of deployed systems, the necessity of confirming synthetic data plausibility and coherence merits requirement of human subject matter expert involvement. Specifically, validation and certification of the performance of AI algorithms must first at least be shown on datasets which are devoid of synthetic data, to showcase true performance on real world circumstances already captured, after which it may be possible to further demonstrate performance upon expanded sets of data that include synthetic cases not yet seen (some of which may never be seen) in the real world.

Regarding Section 3.a. and E.O. 14110 Section 11(b), GE Aerospace posits that independent nonconcordent standardization of Artificial Intelligence in the aerospace domain poses unique risk to American aerospace competitiveness. GE Aerospace encourages NIST and any subsequent US Governemnt regulating agencies working on AI policy to engage with relevant partner agencies across the globe to ensure consistent, well understood standards are established. One example of this could be the development of coordinated policies on defense implementation through the AUKUS framework, which will help enable the successof its Pillar II mission. Another example is the EASA AI Roadmap 2.0 identifies specific definitions for topics such as:

- AI nomenclature and terminology, including hierarchies of human-AI engagement
- Components of an AI application and its requirements therein
- Assurance of an AI system, including learning assurance and development explainability

Given the intent of EASA to be the leading oversight authority for AI with regard to all air travel within European borders, deviation from the EASA definitions may pose the risk of American regulation (as directed through the FAA) diverging from its European counterpart. Were that the case, it would force American aerospace companies operating internationally (including international air carriers based in the United States and American OEMs) to bear significantly increased regulatory costs. Given that the FAA and EASA continue to sign Bilateral Safety Agreements pertinent to these companies – with the most recent being in February of 2023 – the advancement of NIST definitions significantly different from those already adopted by EASA would risk the ability of these two regulatory bodies to efficiently or effectively collaborate on AI-related safety regulation. Similar concerns may exist in other industries as they relate to adoption of the EU AI Act and its associated definitions with their industry-specific regulatory bodies, posing the potential for increased challenge in regulatory response.

As further work is performed by NIST regarding E.O. 14110 and other needs in finalizing standards and regulatory recommendations around the RMF, GE Aerospace is eager to work with NIST and all other relevant parties to ensure safe and effective use of AI.