MINUTES OF MEETING

Committee Title: Information Systems Technical Advisory Committee (ISTAC)

Date: April 23, 2025

Time: April 23 from 9:02 AM to 10:33 AM (open session)

Location: Hybrid: on-site Room 3884, HCHB, and virtual

Agenda Item Presentations/Discussions:

PUBLIC/OPEN SESSION (April 23, 2025)

The meeting opened at 9:02 AM. Approximately 24 people were in attendance in-person and approximately 26 people were in attendance virtually.

Opening and Announcements: Jonathan Wise (ISTAC Chair) opened with a welcome and introductions. Patricia "Patty" Hanna of the Bureau of Industry and Security received a special introduction. Patty has taken over the TAC coordination responsibilities, formerly held by the now-retired Yvette Springer.

Meeting Dates: The next ISTAC meeting is not officially planned, because we are awaiting charter renewal. Assuming the charter is renewed with sufficient lead time, the next ISTAC meeting would be held on July 23-24, 2025.

Working Group Reports: Working group reports were as follows:
-Cat 3A (Jonathan Wise) has been working on SSB phase noise(3A1b10/3A2d4) and digitizers (3A2h).
-Cat3B (Jeff Rogers) had nothing to report.
-Cat 4 (Steven Roberts) is working on interconnects bandwidth for AI computers, definition discussions related to Field Programmable Gate Arrays (FPGA), quantum technologies, and finalizing a FAQ recommendation related to MX data formats for BIS.
-Cat 5p1 (Hector Rivera) brought a QAM (Quadrature Amplitude Modulation) issue to BIS's attention, namely that the consumer WiFi 7 state-of-the-art with 4096 QAM has passed the control threshold of 1024 QAM.
-Cat 5p2 (Roz Thomsen) has created proposals to streamline this control entry, in line with the goals of the new administration.
-Cyber (Ryan Speers) had nothing to report. Because it has now been several years without regulatory or technological issues, it was decided the Cyber working group would move to dormant status.

Public Comments: There were no public comments.

Industry Presentation: Aggregating Interconnects: Mark Renfeld (Hewlett Packard Enterprise) briefed the ISTAC on issues in Wassenaar Arrangement (WA) 4A3g, which is a control on computing interconnects. The control, which pre-dates WA by several years, uses two important undefined terms, "aggregating" and "external" interconnect. As a result of more than three decades of technological change, these terms have become ambiguous. Proposed notions to clarify the undefined term "external" have not succeeded because they defined externality to undefined/ambiguous items, such as chassis (note that modern systems are often a series of nested chassis). Proposed notions to resolve "aggregating" have not converged to a clear solution but have shown more promise by limiting scope to the aggregation concepts in Category 4's Note on Adjusted Peak Performance (APP). Mark suggested four options to investigate for closure: *Delete*, *Define* (the unclear terms), *Derive* (lessons learned from the Total Processing Performance, or TPP, controls) or *Develop* an entirely new control with a similar mission. The issue will be referred to the Category 4 Working Group.

Industry Presentation: Export Controls on Processors: Paul Ledet (AMD) provided a presentation on the myriad of export control measures that apply to computer processors and to computers themselves. In the trajectory from processors to computers, there are no less than seven different measures of performance (calculations per cycle, Adjusted Peak Performance or APP, TPP, Performance Density or PD, gigaflops, TOPS, and the defined term "Supercomputer") across several ECCN's and End Use/End User controls. Each measure has unique features, and no measure directly convert to any other measure. This is very burdensome to exporters and regulators. As these technologies converge (with diminishing differences among processors and computers), it is becoming much more complex. Paul suggested regulations should simplify to fewer measures, without a scope of control change. Paul used a notional example of replacing APP and GFLOPS with TPP, calibrated so there would be no scope changes. The issue will be referred to the Category 4 Working Group

Industry Presentation: 3A1b4 Scope and Intent: Jonathan Wise and Doug Carlson (MACOM) gave a presentation on the scope of and ambiguities in 3A1b4. Key points were:
-3A1b4 scope of control is "microwave sold-state amplifiers and microwave assemblies/modules containing microwave amplifiers…" and it may be informative to compare this to 3A1b10 for which the scope of control is "oscillators or oscillator assemblies". That is: 3A1b4 controls assemblies for which amplification may be a secondary or incidental function, whereas 3A1b10 controls only assemblies whose primary function is oscillator.
-The present 3A1b4 control structure (stairstep of frequency, power and fractional bandwidth) was introduced in 2003, at which time 3A1b6 "microwave assemblies capable of operating at frequencies exceeding 31 GHz" was removed/reserved.
-One example of the scope ambiguity of 3A1b4 is mixers, which differ from customary amplifiers in that their output is a different frequency than their input.
-The scope ambiguity between 3A1b7 and 3A1b4 (items below the control threshold of 3A1b7, and hence presumably uncontrolled, could still be captured by 3A1b4) was resolved in 2016 with the addition of N.B.3 to 3A1b4: "For converters and harmonic mixers designed to extend the

operating or frequency range of signal analyzers, signal generators, network analyzers or microwave test receivers, see 3A1b7".
-Another example of scope ambiguity is a 100m GHz oscillator. If that oscillator has low phase noise, it is 3A1b10. If it has phase noise higher/worse than the 3A1b10 threshold, the implication is that it might be uncontrolled, but if it has an amplifier then it is recaptured by 3A1b4e3.
-The Cat 3A working group will consider whether to prepare a proposal on this.

The open session was adjourned at 10:33 AM.

Next Meeting Date: The next meeting is planned for July 23-24, 2025.