

Trustworthy Computing in 2025 ? CyberSpace 2025 Position Statement

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By 2025, we may not have any trustworthy computing and communication systems. Hardware devices, software systems, and networks are already very complex, and their complexity will no doubt rise tremendously in the coming years. The scientific community does not have the technical means to mechanically certify that today's systems are reliable and error free. Unless there is a substantial and sustained effort at developing the necessary validation procedures, tools, skills, and systems, there will be no trusted computing in 2025. In fact, even with such an effort, it is unlikely that we will even be able to certify contemporary computing systems in eleven years time. Computing systems already control many facets of our financial, medical, transportation, information, and military systems, and this trend is only increasing. Having no known accurate and reliable computing systems certainly leaves us with a very uncertain future.