Metropolitan-scale quantum networks with diamond qubits

Applied quantum networks for business & society

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Propositions

accompanying the dissertation

METROPOLITAN-SCALE QUANTUM NETWORKS WITH DIAMOND QUBITS
APPLIED QUANTUM NETWORKS FOR BUSINESS & SOCIETY

by

Kian Louran VAN DER ENDEN

1. The creation of indistinguishable photons through feedback on quantum frequency conversion offers better scalability than tuning of the quantum emitter (Chapter I.3).
2. Phase stabilization infrastructures will remain necessary in scaling to a large-scale quantum internet (Chapter I.4 & I.5).
3. The potential of malicious applications of a quantum internet is underestimated and requires more attention (Chapter II.5).
4. Funding commercial ventures is more effective in driving large scale quantum internet development than supporting academic demonstration networks.
5. The EU Commission's persistent wish to end the privacy of digital correspondence (Chat Control) while funding quantum secure communication shows the inclination to reserve the right to privacy only for itself.
6. Economies investing solely in climate change adaptation will see immense growth relative to those focused on prevention and mitigation.
7. A PhD candidate's salary should reflect the importance society places on the aimed long-term economic benefit of the academic research that is being performed.
8. University patent ownership of employee inventions should be abolished if a university has the goal to foster entrepreneurship.
9. Unfashionably dressed scientists at public appearances negatively impact the position of science in society.
10. Indoor climate control is an essential requirement for humans and quantum network nodes to successfully operate at long timescales (in part pertains to Chapter I.2 & I.5).

These propositions are regarded as opposable and defendable, and have been approved as such by the promotors prof. dr. ir. R. Hanson and prof. dr. S. D. C. Wehner.