Battery-less computers can now be reprogrammed wirelessly

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Computers are getting better with each day. They are becoming so energy-efficient that we can now think about cutting the final cord that connects them with the outside world: a power supply cable. A great example of such machine is Computation RFID: a small device converting ambient energy (from nearby radio transmissions) to communicate and obtain power for computing. Their size and perpetual lifetime allows them to be embedded in anything, living organisms included, once for the entire lifetime. However the main benefit of Computational RFIDs was nullified by the need for a cable every time a battery-less computer required maintenance or update.

Now, for the first time a team of researchers from Delft University of Technology (TU Delft, The Netherlands) and University of Washington demonstrated that battery-less computers can be reprogrammed wirelessly. Adapting popular communication protocol used in billions of RFID tags, it is now possible to change completely the functionality of a battery-less computer wherever it is hidden/implanted/sealed without damaging the tissue or a building wall, for instance.

Developed protocol, named Wisent, brings closer a vision of completely autonomous, software defined sensors, battery-less cloud storage and bi-directional battery-less communication.

Results on this work was presented this April at the IEEE INFOCOM conference in San Francisco.

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Link to article: arxiv.org/abs/1512.04602

Link to conference: infocom2016.ieee-infocom.org/

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