Neotopsy: Micro-CT angiography for the virtual autopsy of fetuses, newborns and infants

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### Project goals
Autopsy rates for infants are declining, whereas, the information gained through autopsy might help to get a better understanding of sudden infant death. One way of increasing the acceptance of autopsy for neonates is the use of virtual autopsy by Post-mortem Computed Tomography (PMCT) imaging. Clinical CT scanners lack spatial resolution to visualize small features in neonates. We develop in this project a micro-CT scanner for neonates utilizing dual-energy angiography technique to focus on malformations in the cardiovascular system.

### Scientific Innovation
- Dual-energy PMCT angiography micro-CT scanner (~30 um) with optimized image quality for forensic investigation for neonates
- Database with classified 3D micro-CT images of deceased fetuses, preterm and term infant
- Feature extraction (texture/shape, intensity) for different classes of malformations from above database for machine learning
- Develop and train efficient machine learning algorithms
- Testing the feasibility and application on a set of real forensic images and simulated malformations

### Business Potential
- Currently no commercial device like this is available
- Targeted costumers: perinatal centers
- 10 such centers in Switzerland, >300 in Europe
- Market leader position

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