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Sommario/riassunto	This open access State-of-the-Art Survey presents the main recent scientific outcomes in the area of reversible computation, focusing on those that have emerged during COST Action IC1405 "Reversible Computation - Extending Horizons of Computing", a European research network that operated from May 2015 to April 2019. Reversible computation is a new paradigm that extends the traditional forwards-only mode of computation with the ability to execute in reverse, so that computation can run backwards as easily and naturally as forwards. It aims to deliver novel computing devices and software, and to enhance existing systems by equipping them with reversibility. There are many potential applications of reversible computation, including languages and software tools for reliable and recovery-oriented distributed systems and revolutionary reversible logic gates and circuits, but they can only be realized and have lasting effect if conceptual and firm theoretical foundations are established first.