

Code B_2762

Department	Electrical and Electronic Engineering
UniCa reference person	Alessandro Giua
Project title in English	Higher order opacity in discrete systems
Project title in Italian	Opacità di ordine superiore nei sistemi ad eventi discreti
Subject area of reference (World University Ranking)	ENGINEERING AND TECHNOLOGY
Project summary and VPS' profile	<p>Opacity is an interesting notion of secrecy which has been recently formulated for large classes of systems. A discrete event system on alphabet E is said to be opaque with respect to a given secret if an intruder which can observe only the occurrence of events in a smaller alphabet E_i cannot discover the secret.</p> <p>A new interesting notion of opacity recently presented in the literature considers a system user which can observe only the occurrence of events in a smaller alphabet E_u and wants to detect the secret. We say that such an observed system is higher-order opaque if an intruder which observes events in a possibly incomparable alphabet E_u can never determine if the user knows the secret. The objective of this research is to formally characterize several notions of higher order opacity such as “You know that I know”, “You do not know that I know”, “You know that I do not know”, etc.</p>
Proposed length of stay	Short visit of 10 days
Expected period of activity	October 2024
Academic position of the VPS'	Professor
Course of Study	Dottorato di ricerca (PhD Course)
Language of instruction	English