CAST and LIRIS collaborate to apply advanced graph visualization algorithms for understanding complex software applications

New York and Paris – June 20, 2024 – CAST, the global leader in software intelligence, today announced a strategic research collaboration with the Laboratoire d'InfoRmatique en Image et Systèmes d'information (LIRIS) at developing advanced algorithms for simplified graph representations to improve the analysis, visualization, and understanding of complex software systems.

The goal of the collaboration is to develop advanced algorithms that yield more efficient and user-friendly visual representations of application structures. This effort is crucial as the complexity of home-grown software applications continues to grow, demanding ever more sophisticated analytical capabilities, as well as easier ways to visualize and navigate their internal structures. By leveraging LIRIS's expertise in graph technology, CAST aims to enhance its ability to visualize and analyze complex software architectures, making it easier for users to understand, improve, and transform their software systems.

This collaboration also aims to develop progressive visualization techniques that allow users to interactively explore graphs and display specific parts according to their needs. This approach aims to offer more efficient visual analysis of application graphs representing complex software applications.

LIRIS, one of France's most prestigious research institutions, is backed by computer science leaders such as the CNRS (National Center for Scientific Research), INSA Lyon, Université Claude Bernard Lyon 1, Université Lumière Lyon 2, and École Centrale de Lyon. Spearheading the partnership is the GOAL team within LIRIS, which specializes in graph research, exploring their structures, developing efficient algorithms, and applying them to fields such as big data and security.

"Collaborating with LIRIS and the GOAL team, renowned for their expertise in graph technology, aligns perfectly with our mission to provide deeper insights and intuitive user experiences for our clients grappling with complex software systems," said CAST Imaging Vice President Luc Perard. "This partnership underscores our commitment to pushing the boundaries of software intelligence technology."
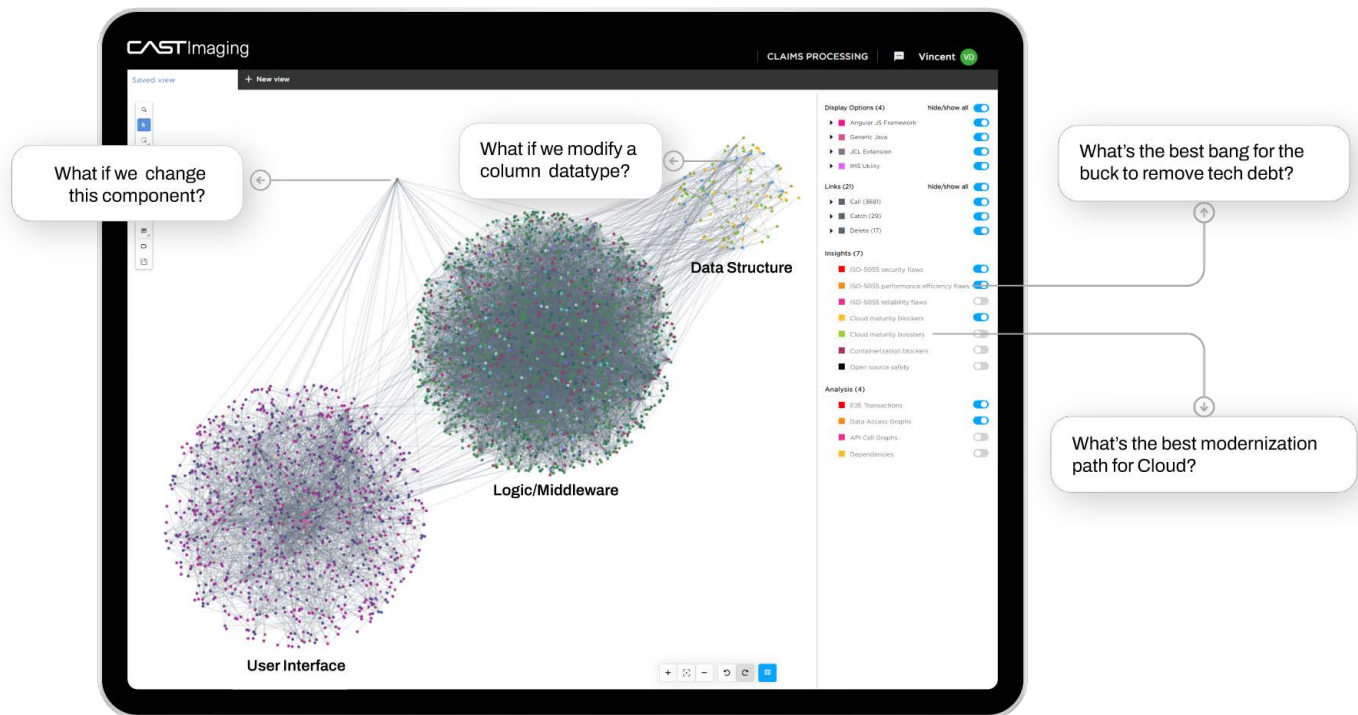
Fig 1. Visualization of a Claims Management application comprised of 46,000 objects in CAST Imaging

[CAST Imaging](#)'s R&D efforts are centered on comprehensively analyzing the components and interactions within applications and clearly visualizing this information to facilitate understanding. As application complexity increases, the amount of information extracted and restored by CAST also grows, necessitating more advanced visualization techniques. This will enable CAST Imaging, known as the MRI for software, to better present its interactive maps of thousands of reverse-engineered code elements and present them as a living knowledge base, further empowering technologists involved in modernization, refactoring, cloud migration, and more.

"The research carried out in this collaboration between LIRIS and CAST on large real data graphs will bring both technological solutions for applied CAST barriers as well as new challenges and new solutions to the theoretical issues of GOAL team researchers," added professor Hamamache Kheddouci, who leads the LIRIS collaboration with CAST.

About LIRIS

[The Laboratoire d'InfoRmatique en Image et Systèmes d'information (LIRIS)](#) is a leading research laboratory in France, specializing in computer science. It is a joint research unit backed by several prestigious institutions, including the CNRS, INSA Lyon, Université Claude Bernard Lyon 1, Université Lumière Lyon 2, and École Centrale de Lyon. LIRIS focuses on a broad spectrum of computer science research, addressing challenges in areas such as artificial intelligence, big data analytics, computer vision, cybersecurity, and digital transformation.

About CAST

CAST, the [software intelligence](#) leader, provides software that 'understands' multi-technology software systems and automatically derives insights about their inner workings–interactions between all its elements, transaction flows, data access paths, changes needed to move to cloud, open-source risks, green impact, ISO 5055 compliance, etc. It is used globally by thousands of digital leaders, helping them make smarter decisions, maintain, and transform custom software with greater speed, and exert better ongoing control of the risks involved. Visit [castsoftware.com](#).