Kx tackles 'Big Data' crop research at Earlham Institute

London & Palo Alto (15 Aug 2016) – Kx has been chosen by <u>Earlham Institute</u> (EI) as their technology partner for a new project which will revolutionise research into bioinformatics and promote a sustainable bioeconomy.

Ji Zhou, Project Leader, and his colleagues at EI are planning to develop and embed the latest machine-learning algorithms, including deep learning techniques in Kx's platform, to create predictive models for studying crop growth patterns and agricultural tactics. The models will incorporate factors such as environmental stress and crop response, i.e. crop development and adaptation.

For more than 20 years, Kx has been the powerhouse in high-speed, big data analytics in the world's major financial centres. This expertise will now be used by EI in a completely new approach to the analytical processing of living systems. In an environment where the need to process increasing volumes of data at ever-greater speeds has been failed by the traditional query-response model, Kx will provide real-time active queries for the enormous datasets generated in life sciences.

Tim Stitt, Head of Scientific Computing at EI, commented: "For EI to remain at the forefront of bioscience research it is imperative that we continue to partner with the world's leading technology providers. I'm therefore delighted to collaborate with Kx, as we continue to explore new technologies for addressing the challenges of ever-increasing data volumes. Leveraging the high-performance data processing capabilities of Kx's technology, perfected in the financial sector over more than 20 years, makes for a truly exciting and innovative relationship."

To address the challenges presented by the emergence of Big Data in omics (phenomics and genomics), as well as in genetics, stream data processing and in-memory computing are essential tools for life scientists. Independent tests have confirmed that Kx provides the fastest streaming data architecture, combined with the greatest volume capacity needed to support advanced data management and analyses of multi-dimensional life science datasets.

Brian Conlon, Kx Chief Executive Officer, said: "We are excited to be working with the Earlham Institute on such an innovative project. As organisations are facing the immense challenges of big omics data, we believe that utilising the latest stream-processing and in-memory computing technology from Kx will allow future commercial advantage to be generated from consuming and analysing real-time datasets."

The UK government has recently reinforced its strategy in agriculture with IoT (Internet of Things) technologies to help maximise yields, improve food traceability, and tackle environmental challenges through networked remote sensors, particularly for crop development and genetic research. This policy change, combined with EI's long-term strategy of agri-tech and high performance computing (HPC), demonstrates a valuable opportunity to apply the real-time analytical technology to research genotype-phenotype-environment interactions based on EI's world-leading HPC infrastructure.