

קומרניקא: שולחן עבודה דיגיטלי עם כלים חישוביים מתקדמים למחקר המגילות

**Scripta Qumranica Electronica –
A New Digital Workspace with Advanced Computational Tools for Scroll Research**

Scripta Qumranica Electronica is the result of a five-year collaborative effort, supported by the German-Israeli Project Cooperation program, to fully integrate the rich lexical database of the Qumranwörterbuch developed in Göttingen with the high-resolution digital photographs of the Dead Sea Scrolls imaged in recent years by the Israel Antiquities Authority.

Qumranica provides a web-based working environment for scholars and the public. Users can prepare their own transcriptions of fragments and add notes and comments. They can mark regions of interest on images and link those to transcriptions. They can arrange virtual fragments on a digital canvas as part of restoration of a full scroll. And users will be able to collaborate on a shared edition of material they develop.

Algorithms were designed to distinguish between the fragments appearing in a picture and the background in both old infrared images and the new multispectral ones, so users can manipulate virtual fragments without other artifacts. Algorithms were also developed to locate a fragment, based on a new image, among the many fragments in plates of fragments photographed at earlier dates and in different stages of deterioration. A pipeline was designed to facilitate automatic alignment of transcriptions with images, involving layout analysis, line segmentation and imperfect automated text recognition, then followed by algorithmic alignment, letter by letter, with the actual texts.

(Joint project with Reinhard Kratz and Jonathan Ben-Dov.)