

## User Interface Principles for Mobile Video Diving

<p><b>What if?</b></p> <p>What if the core functions of <b>DIVER</b> (the toolset allowing capturing, marking, recording, annotating, and sharing) was available to mobile users -- to anyone with a video-enabled phone? For example, what if people at a birthday party could use their mobile phones to record and share their own "stories" of the event.</p>	<p><b>Applications</b></p> <ul style="list-style-type: none"> <li>• Sales and Other Training</li> <li>• Tapping Distributed Expertise</li> <li>• Leisure &amp; Entertainment</li> <li>• Sports</li> <li>• Medicine</li> </ul>
<p><b>Research</b></p> <p>While the technical infrastructure for mobile video services is now a reality, much less is known about how to design interfaces for rich user multimedia experiences, such as those exemplified by <b>DIVER</b>, on the small form factors of mobile phones. The goal of this project is to develop a set of user interface prototypes examining how core functions of DIVER map to the current generation of video enabled mobile phones and to derive a set of design principles based on evaluation of the prototypes.</p> <p>--&gt; More below</p>	<p><b>People and Partners</b></p> <p>Roy Pea (SCIL)</p> <p>Michael Mills (SCIL)</p> <p>Joseph Rosen (SCIL)</p> <p>Kenneth Dauber (SCIL)</p> <p>Paula Wellings (SCIL)</p>

**Research** DIVER (Digital Interactive Video Exploration and Reflection) is a new platform being developed at Stanford for "point of view" authoring in the realm of digital multimedia<sup>1</sup>. The DIVER toolset allows people who are not media professionals to capture events with video and to create "dives" on them — i.e., precisely focused and annotated perspectives on the events that can be shared with others via WebDIVER. At present in DIVER, digital cameras are used to capture source content that is later "re-purposed" using the DIVER toolset on desktop or laptop PCs. The DIVER user interface consisting of an overview, virtual camera window and annotation worksheet has proved to be a very simple and intuitive environment for people to engage in point-of-view authoring. DIVER's virtual camera rectangle, controlled by a mouse for panning and zooming, is used to make precise reference to any space-time segment of the original videorecording, and one can select "marks" (keyframes) or "record" (making a new movie using the DIVER virtual camera inside the original video), which can then be text annotated, and saved to WebDIVER for sharing and distribution. The team has developed prototype applications in the realms of education, corporate training and entertainment.

This project investigates the degree to which the core functions of DIVER can be made available to mobile users -- to anyone with a video-enabled phone. While the technical infrastructure for mobile video services is now a reality (high bandwidth wireless links, new mobile phones with built in cameras, three different methods for video interaction in either Person-to-Person or Content-to-Person use modes: streaming video, downloading clips, video messaging), much less is known about how to design interfaces for rich user multimedia experiences, such as those exemplified by DIVER, on the small form factors of mobile phones. The initial goal is to develop a set of user interface prototypes examining how core functions of DIVER would map to the current generation of video enabled mobile phones and to derive a set of design principles based on evaluation of the prototypes.

**URL** <http://diver.stanford.edu/>