Mobile Applications for the ATLAS Outreach Programme

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Abstract. During the ATLAS Outreach Programme, several mobile applications were developed for mobile devices and the implementation into the Learning with ATLAS@CERN portal as online version. They are based on an interactive learning approach, which is primary used for mobile operations. The innovative e-learning project called moCERN, which is designed to provide the learner with mobile learning using a variety of background information and brings them closer to physical phenomena.

With the help of 22 interactive mobile learning applications that describe the most important parts of modern physics, the user can quickly find out about all exciting areas. Due to the easy and simple operation of the various e-learning applications, it is possible to use the mobile learning programs for all users. Interactive animations lets users easier understand some perhaps as yet incomprehensible explanations. Thus, one needs little prior knowledge of physics to understand all the processes of physics. But for a more detailed physical or mathematical model you need further information sources like scientific books, journals or web sites. Immediately following an application you can just put your acquired knowledge to the test. A auiz is implemented as self assessment, which will allow you to test your own skills. In addition to the individual applications, there is a website that hosts all project contributions. There you can call up a virtual phone and start all applications. The applications are available on the Learning with ATLAS@CERN portal in German (http://www.learningwithatlasportal.eu/en/node/93579) and English (http://www.learningwithatlas-

portal.eu/en/node/93580).

For the development process several aspects have to be taken into account. Very important is the social aspect, because it could increase motivation and time user's willing to spend with Alexander K Nischelwitzer University JOANNEUM Information Managment Alte Poststrasse 147 A-8030 Graz alexander@nischelwitzer.at

the application. This part is realised with an attractive design and layout and an "easy to use" concept. Furthermore images and animations extend and open up the information presented in the applications. For the technical aspect a state of the art development kit for interactive applications was chosen. The flash lite applications could be used online in the web, or offline on mobile devices as well as they are e.g. combined with an QR code (Quick Response Codes) its possible for downloading the applications from the internet or a WLAN on the portable device. In this case it is also necessary to optimize the size of the application in order does not exceed bandwidth. Most of the modern mobile phones and smart phones are able to handle interactive flash lite content. Either you make field testing of mobile devices or you are looking on the websites of the flash technology developer

(http://www.adobe.com/mobile/supported_device s/handsets.html and http://www.adobe.com/mobile/pdfs/flash_lite_for ecast_installed_base_jan09.pdf) to identify supported devices. The educational aspect is a challenge to develop short and concise, but correct information about a very specific physical topic like quantum physics.

Learning with mobile applications is a learner centred approach but should not replace alternative learning resources. This is a complementary way to provide information. So learning gets more flexible anywhere and anytime.