CUSTOM DEVELOPMENT FOR ONLINE LIBRARY PROTECTION
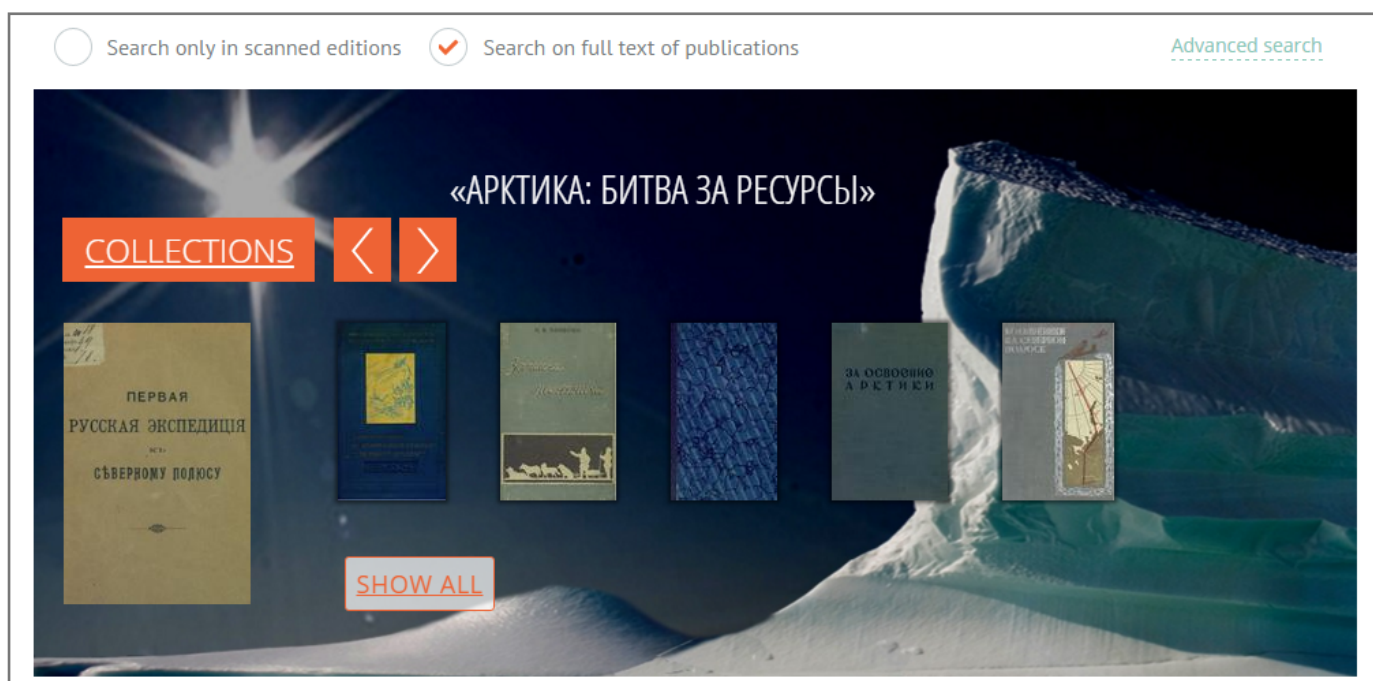
STARFORCE

National
Electronic
Library

НЭБ

About the project

The National Electronic Library (NEL) is a web resource where books, scientific works and other compositions are stored described, catalogued and copy protected.

НЭБ

The NEL contains:

| **1,6 million** | copies (books, theses, abstracts) | **26,9 milion** | records in an electronic catalog for electronic publications | **>10%** | published titles in Russia |

The main goal of NEL

The main goal of NEL is to provide free access to all book collections and scientific works which are stored in Russian libraries from the literary monuments of history and culture, to the latest works of contemporaries.

A single point of access to distributed librarian funds is **нэб.рф**. There are also mobile applications for convenient use from mobile devices. Books are stored in PDF format with recognized texts, which allows to navigate easily and use full text search on publications.

The access to all the collections of the online library is regulated by the law. It means that it is possible to provide free access to the books at libraries but with no opportunity to copy them.

The target of the project

In accordance with the concept of the project, there are two types of access to the online library. The first one is for the content with no limitation in distribution. These books are available for any internet user. The second access type is for the books under valid copyright. The target is to organize conditional access with technical possibility to get acquainted with all the works of the library, but prevent them from full or partial copying and unauthorized distribution. This type of access can be granted only to the users who have completed full registration on the site **нэб.рф**

The participants of the project

The sponsor

Ministry of Culture
of the Russian Federation

The main contractor

Elar

The expert in information protection

StarForce Technologies Inc.

The Project Manager
at StarForce Technologies

Artur Khodjaev

The project milestones

The first stage identified the main subtasks of the project:

1 To provide user authorization.

2 To develop a special application for user devices that can protect content against a number of threats.

3 To provide correct work of the server that gives books for viewing.

4 To protect internet connection between the client and the server to prevent interception of digital information and the possible replacement of the server.

Scheme of work
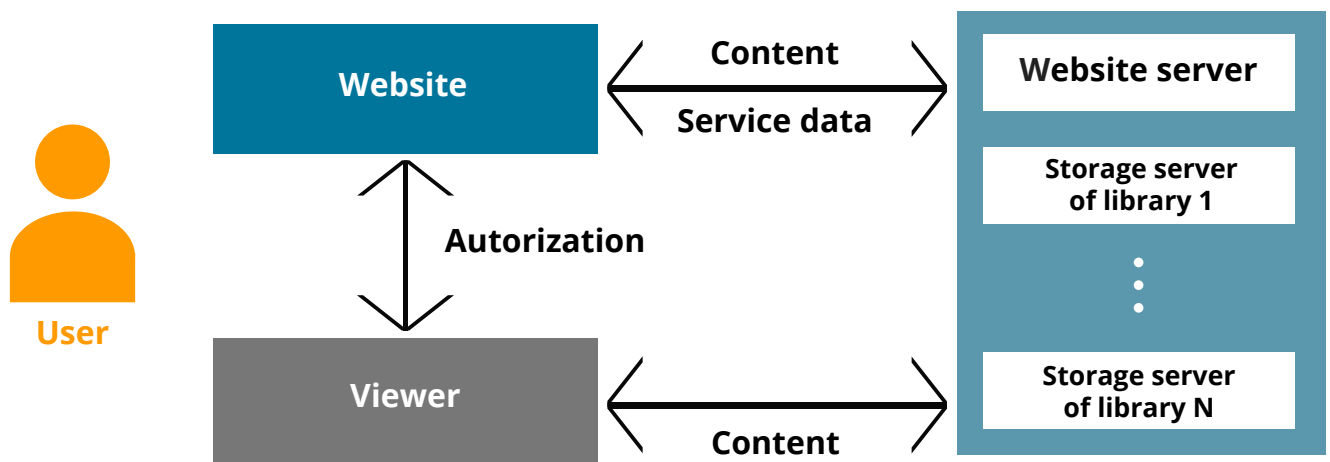
The most challenging part of the project was the development of a viewer application, which is capable to protect books and scientific works against unauthorized distribution.

Requirements to the viewer application

Cross Platform

Support of additional features: search, bookmarks, comments, etc.

High level of tamper resistance

Protection against screen capturing

Convenient navigation

Speedy content download

The architecture was defined and main requirements were collected so we started the second stage. The development of viewer applications for different platforms and authorization mechanisms were the main tasks for this period. The prototype of the system was demonstrated to Dmitry Medvedev, the chairman of the Russian government 13 January 2015. The chairman had a chance to study online library on a Tablet PC using his new reader's login and password.

Photo: http://www.rsl.ru/ru/news/140115

The third stage included works with library servers, protection of internet connection and expansion the features of the viewer applications.

The project was commissioned in April 2015.

How it works

A user finds an interesting book in the catalog of the online library. If this book has a public status the user is able to read it in a browser tab on his device.

If the book has copyright protection, the user is offered to download a viewer application and sign up.

When the procedure of registration is completed a user can access any book of the library from anywhere on the Earth.
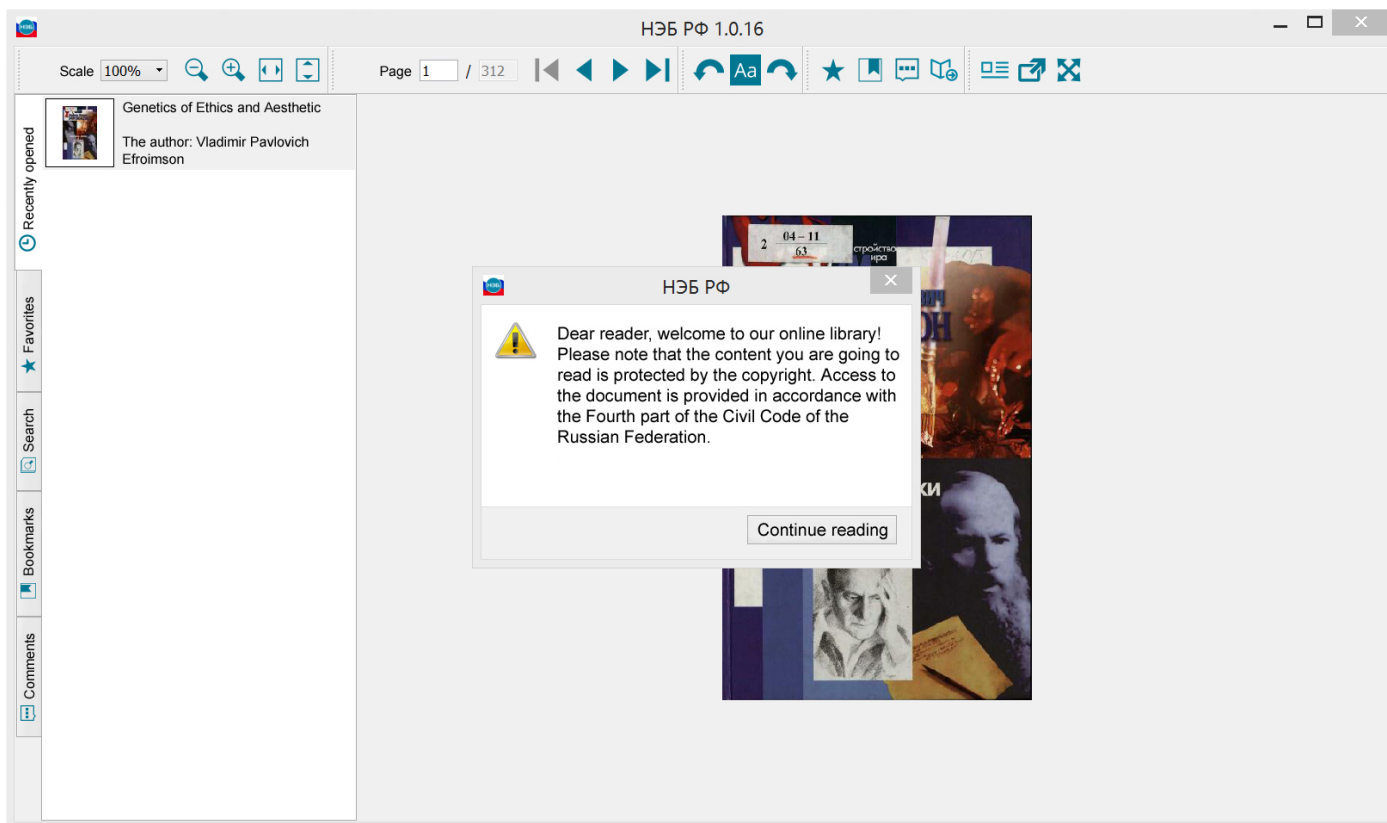
Basic features of the viewer application

Provision of viewing a book page by page as a set of images (converting from PDF to JPG).

Lack of caching pages in the ROM of a device user.

Prohibition of screenshot taking.

Features to view a document: preview, zoom in, zoom out, rotate, color invert and quick navigation.

Full screen mode.

Support of search to find words and phrases within a document with further highlighting of the results found in the pages of the document

The special tabs provide additional quick navigation features

Recently opened — Here a user can find a list of books, which he has viewed.

Favorites — A user can add any book to Favorites.

Search — This tab contains search line to look for word and phrases.

Bookmarks — This tab contains thumbnails of bookmarked pages for quick navigation.

Comments — This tab contains thumbnails of pages with comments.

STAR FORCE ®

StarForce Technologies is a leading vendor of information protection, copy protection and code obfuscation solutions for software, electronic content and audio/video files.

Since 2000 the company has been providing multifunctional technological services to protect copyright and intellectual property. Since 2015 the company is the official distributor of integrated solutions based on SafenSoft products.

StarForce Technologies has been successfully developing and implementing its state-of-the-art security solutions, providing copyright and intellectual property protection worldwide. Two of these solutions were transformed into StarForce cloud services: **SFContent.com** protects e-Documents against illegal copying and distribution and **SFLetter.com** secures emails.

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