Internet Safety Technical Task Force
Technology Submission Template

VerificAge – Age Verification Online

http://www.verificage.com

ABSTRACT

VerificAge has developed a proprietary, biometric, mouse-like PC peripheral that performs real-time, online age verification. The VerificAge AGR™ system is able to distinguish between a child and an adult and can prevent sexual predators from contacting children under the age of 14 (on average). It enables the establishment of 'predator free' social networks, instant messaging, online chat rooms and other P2P contacts. In addition VerificAge's AGR™ technology is used to prevent children from accessing inappropriate content and web sites enhancing existing parental controls.

Keywords

Online age verification, parental controls, contact filtering, access control, biometrics

Functional Goals

☑ Limit harmful contact between adults and minors
☐ Limit harmful contact between minors
☑ Limit/prevent minors from accessing inappropriate content on the Internet
☐ Limit/prevent minors from creating inappropriate content on the Internet
☐ Limit the availability of illegal content on the Internet
☑ Prevent minors from accessing particular sites without parental consent
☑ Prevent harassment, unwanted solicitation, and bullying of minors on the Internet
☑ Other – verify age group (adult or minor) accurately and anonymously

PROBLEM INTRODUCTION

- The industry and web site operators have failed to provide an effective tool to protect children
- There are no online gates that are designed to really keep adults away from kids
- Anyone can easily falsify their age
- Many web sites have become a haven for predators
- Legislation limits collection of data related to underage users making it nearly impossible to authenticate non-adults

PROPOSED SOLUTION

VerificAge's online biometric age verification system which protects children from sexual predators and harmful content. The system prevents adults from contacting children under the age of 14 (on average) and enables the establishment of 'predator free' social networks, instant messaging, online chat rooms and other P2P contacts.

Users protected by VerificAge's AGR™ system can only interact with other users of the same age group or with those on their "friendly list". The system is also used to prevent children from accessing inappropriate content and media.

AGR™ device is basically a small ultrasound sensor which scans the physiological attributes of the human finger in order to determine the maturity stage of the user.

VerificAge's technology establishes a new paradigm in child protection online – Contact Filtering

VerificAge's AGR™ Highlights

- The system is based on biometric scanning of physiological attributes of a human finger.
- Uses a 'one time measurement' that doesn't require any database operation, ensuring that user's privacy cannot be compromised.
- AGR™ doesn't identify the individual person but rather his/her age group category.
- High accuracy rate; impossible to intercept or forge the results.
- AGR™ is language and culture neutral.
- Cost-effective USB device.
- Easy to install at home for parents who are not familiar with the Internet.
- Device and technology is patent protected in all major countries worldwide.
- Provides a branded solution for online child safety

Technical Attributes

The core technology relies on a low-cost, proprietary, low frequency ultrasound scanner which is capable of scanning the physiological attributes of a user's finger in order to determine his maturity stage. This assessment can accurately identify children who have not yet matured (under 14 on average) and those who can be physiologically considered as "Non-Children" or "Adults" or "14 and over" The technology is packaged as a PC peripheral similar in size to a PC mouse. The device is installed on a user's computer with corresponding software and is then ready to scan and analyze a user's age in real-time. VerificAge offers a server-side SDK for integration with existing web properties.

VerificAge's technology is targeted at two main scenarios: integration with existing web properties, and integration with parental controls or with security suites.

When integrated with existing web properties, site/network operators can choose to incorporate VerificAge's AGR™ into their access control and interaction management process. In effect, they can issue a challenge by incorporating VerificAge's JavaScript code into their website. The challenge is presented to the user on his/her computer enabling the user to scan their finger. Once scanned, the resulting data is sent to the website's server for processing via VerificAge's server-side SDK and corresponding web services. Once processed, a result is returned to the website and the website can implement its policy regarding access control or interaction management (contact filtering).

When integrated into parental controls the parental control software (whether ISP based or locally installed on the user's desktop) can integrate the JavaScript, ActiveX or server-side SDK in order to facilitate issuing a challenge, process the result data and determine a user's age group. The parental control software developer can then decide how to incorporate the age verification into its policies.

Use Cases

VerificAge's AGR™ was designed for use in a number of use cases:

- Integration with social networks, websites and instant messaging platforms. In this scenario the web property integrates a server-side SDK (software development kit) in order to add age authentication functionality into its user authentication (login) process as well as its interaction management features. In this case every time a user logs in to the website/social network/IM platform he/she would need to verify their age using VerificAge's device. The user would also need to re-verify their age when interacting with other users on the site/social network/IM platform. In this scenario a user would be challenged when engaging in an online chat with another user. The user on the other side would also be challenged and only if both parties were of the same age group would the chat take place. Lists of pre-approved contacts ("whitelists") would be used to enable non- AGR™ users to interact with AGR™ users.
- Integration with parental controls software. In this scenario parental control software suites would add additional security measures based on verifying the user's age. The age could be verified upon starting a session (e.g. logon to the operating system) and upon each interaction with other users via IM networks, chats or the like. In addition the user's age could be verified prior to configuring the software or uninstalling it. In this case the user would need to be verified as an adult to ensure that children do not circumvent the parent's policies.

In both cases the user experience is similar. When challenged the user is presented with a dialog window which explains the purpose of the challenge (e.g. "Facebook would like to verify that you are under 14") and a prompt to enter their fist into the device. The device then scans their finger and a progress bar is shown on screen. After 2-3 seconds the dialog window displays either a "successfully scanned" message or an error message enabling the user to retry the procedure. Upon successful scan, the system returns control to the calling service (web site/social network/IM platform or parental control suite) and the calling service decides whether or not to enable the access or interaction depending on its policies.

In addition VerificAge operates an online web service which enhances the security and reliability of the age verification process by monitoring abuse and abnormal usage of the devices across networks. Partners (websites, IM platforms or parental control suite developers) can connect to this service to verify that the device identification of the challenged user is not "blacklisted" as a suspect device (used by a predator).

Effectiveness and Accuracy

VerificAge has performed thousands of measurements on subjects of all age groups.

The accumulated data has enabled the company to set a very precise algorithm for determining the age category of a user through the age verification process. Accuracy rate is one of the parameters that Verificage's partners can pre-determine in accordance with their own policy.

VerificAge's AGR™ system is capable of providing the following (on Average):

- Accuracy, sensitivity and specificity of measurements - 99%
- Accuracy rate for P2P interactions between children up to 12 and adults - 98%
- Accuracy rate for P2P interactions between children ages 12-13 and adults - 96%

Strengths and Weaknesses

Strengths

- Enables segregation between adult and children populations as they exist in the physical world
- AGR™ doesn't identify the individual person but rather his/her age group category.
- The solution does not compromise privacy or any freedom of speech principles.
- Server-centric design - harder to circumvent by hackers and predators.

- Uses a 'one time measurement' that doesn't require any database operation, ensuring users' privacy protection.
- High accuracy rate
- Hardware based - sense of security, harder to circumvent
- Multiple security tiers- Almost impossible to intercept or forge the results
- Transparent operation -No disruption to normal browsing / web access. No proxying of web access via 3rd party sites and no slow-down of Internet speed
- AGR™ is language and culture neutral.
- Cost-effective USB device.
- Simple to use – easy adoption by children and parents.
- Easy to install at home for parents who are not familiar with the Internet.
- Provides a branded solution for online child safety
- Provides protection to the most needy, the most vulnerable population on the net –children under 14, who are not yet physically or mentally mature enough, whose judgment cannot always be trusted and who constitute the real targets for sexual predators
- Although the solution is not supposed to replace parental supervision and empowerment, it dramatically enhances children's awareness for their own online safety
- Broad potential for integration with other players on the market
- The system is based on biometric scanning of physiological attributes of users' fingers and not on an external data base.
- Device and technology are patent protected in all major countries worldwide
- AGR™ technology is multi platform; it can also protect the safety of children from harmful adult content and exposure outside of the Internet arena – including cellular applications, cable TV, gaming consoles, DVD, video & electronic devices

Weaknesses

- Hardware based solution – requires purchasing another piece of hardware (one of the next versions the device will be integrated with a mouse).
- Contact filtering functionality requires both sides to have VerificAge's device in order to provide full value (if only one side has VerificAge then system employs whitelist mechanism). This is a typical temporary handicap for any new communication machine on the market (i.e. the fax machine or video conferencing equipment)
- Accuracy challenges with borderline age due to standard biological deviations.
- The need to explain the difference between chronological age and biological age especially as it applies to borderline (~14) ages.
- Cannot accommodate legal minimum age requirements such as 16 or 18

Implementation

The solution incorporates a USB connected PC peripheral and corresponding software. The software contains a Windows service, system tray icon and a browser help object (plug-in) which is installed via a secure installation procedure.

Parents install and configure the software. Once installed, the software can only be configured and uninstalled by an identified adult (password and AGR challenge).

For the end user:

- Windows XP/2003 or Vista
- USB port
- Internet Explorer 6.0 and up
- Firefox 1.5 and up
- Administrative rights to install software

The software installation and use is very simple and is geared for non-computer oriented consumers.

For integration partners (websites/social networks/IM platforms and parental control software developers): SDK offered in .Net, ActiveX, PHP and Java. SDK requires programming skills and understanding of web service usage.

Standards

The solution is fully compliant with the "Children's Online Privacy Protection Act 1998" (COPPA) and the "Child Online Protection Act 1998" (COPA), and with other US criminal Codes

The device is full compliant with safety regulatory standards (UL, FCC, CE, VCCI)

EXPERTISE

VerificAge's engineers are world specialists in biometrics and ultrasound technology. They hold dozens of registered patents and have published dozens of papers and articles in academic and scientific journals and have received international awards.

COMPANY OVERVIEW

VerificAge is a privately held company established in 2004. The company is currently manufacturing devices aimed at servicing initial customers: a leading Israeli children's portal, and a leading Israeli ISP.

VerificAge was invited by the US Federal Trade Commission (FTC) – Bureau of Consumer Protection, to participate in a new technologies showcase on "Protecting

Consumers in the Next Techade" held in Washington DC on October 2006, where its AGR™ system was heralded as "being one of the key technologies that will shape consumers' core experiences in the coming ten years".

BUSINESS MODEL OVERVIEW

VerificAge is working closely with existing web properties in order to incorporate its solution as a means of online age verification. In addition VerificAge is partnering with parental control software vendors to incorporate its technology as an accurate means of verifying the user's age ensuring children cannot circumvent parent's intentions. VerificAge aims to offer a full solution for parental controls incorporating its AGR™ technology and device based on best of breed parental control software.

VerificAge aims to start selling its AGR™ solution (device + software) on Q4 2008. Sales mainly occur through VerificAge's online e-commerce site. VerificAge is planning to work with distribution partners including leading e-commerce vendors as well as participating web properties who would like to help distribute the device as part of their child internet safety measures.

The device has an MSRP (Manufacturer's Suggested Retail Price) of $60.

Distribution partners may choose to offset (subsidize) some of the costs of distribution through commercial cooperation with retail brands and 3rd party intermediaries who wish to identify themselves with protecting children online. In addition, partners may choose to provide alternative financing schemes (monthly rental) as is the case with ISP oriented services.

VerificAge plans on subsidizing costs for non-profit organizations and educational organizations who wish to deploy the devices on location. The company also plans on offering an advertising-funded version of the solution to consumers. The ad-funded version will include child-appropriate commercial advertisements on VerificAge dialog windows in exchange for a heavily subsidized device.

In addition, VerificAge may provide ongoing services to participating web properties (sites and networks) who wish to incorporate the VerificAge SDK. Such services will be priced according to amount of users and verification transactions. Pricing structure has yet to be defined and will be competitive to similar online age verification solutions.

VerificAge also offers its technology to OEM partners in a number of different business models including service revenue sharing which is common in the security suite business.

MORE INFORMATION

More information is available at http://www.verificage.com

CONTACT INFORMATION

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CERTIFICATION

I certify that I have read and agree to the terms of the Internet Safety Technical Task Force Intellectual Property Policy.