



## A Unified Use-Misuse Case Model for Capturing and Analysing Safety and Security Requirements

O. T. Arogundade (Chinese Academy of Sciences, China), A. T. Akinwale (University of Agriculture, Abeokuta, Nigeria), Z. Jin (Peking University, China) and X. G. Yang (Chinese Academy of Sciences, China)

Volume 5, Issue 4. Copyright © 2011. 23 pages.

**OnDemand Article PDF Download**

Download link provided immediately after order completion

**\$30.00**

**Add to Cart**

DOI: 10.4018/jisp.2011100102

Source title: [International Journal of Information Security and Privacy \(IJSP\)](#)

[Sample PDF](#) [Cite Article](#) [Favorite](#)

[Send](#) [Like](#) 0 [Tweet](#) 0

### Recommend

[Send to a librarian](#)  
[Send to a colleague](#)

### Available In

[InfoSci-Journals](#)

### Browse Subjects

[Business Technologies](#)  
[Database Technologies](#)  
[E-Government](#)  
[Educational Technologies](#)  
[Intelligent Technologies](#)  
[Knowledge Management](#)  
[Medical Technologies](#)  
[Multimedia Technologies](#)  
[Security Technologies](#)  
[Social Technologies](#)  
[Software & Engineering](#)

### Abstract

Top

This paper proposes an enhanced use-misuse case model that allows both safety and security requirements to be captured during requirements elicitation. The proposed model extends the concept of misuse case by incorporating vulnerable use case and abuse case notations and relations that allows understanding and modeling different attackers and abusers behaviors during early stage of system development life cycle and finishes with a practical consistent combined model for engineering safety and security requirements. The model was successfully applied using health care information system gathered through the university of Kansas HISPC project. The authors were able to capture both security and safety requirements necessary for effective functioning of the system. In order to enhance the integration of the proposed model into risk analysis, the authors give both textual and detailed description of the model. The authors compare the proposed approach with other existing methods that identify and analyze safety and security requirements and discovered that it captures more security and safety threats.

### Complete Article List

Top

[Volume 6: 3 Issues \(2012\)](#)  
[Volume 5: 4 Issues \(2011\)](#)  
[Volume 4: 4 Issues \(2010\)](#)  
[Volume 3: 4 Issues \(2009\)](#)  
[Volume 2: 4 Issues \(2008\)](#)  
[Volume 1: 4 Issues \(2007\)](#)

[View Complete Journal Contents Listing](#)

### Complete Journal

**\$210.00 - \$860.00**

[View Journal Pricing Options](#)



Full-text search over 58,000 research articles and chapter

[All Subjects](#)

### Related Articles

[The Social Organization of a Criminal Hacker Network](#)  
© 2009, 15 pp.  
[Sample PDF](#) | [More details](#)

[Fair Electronic Exchange Based on Fingerprint Biometric...](#)  
© 2009, 31 pp.  
[Sample PDF](#) | [More details](#)

[Risk of Contract Growth and Opportunistic Behavior](#)  
© 2012, 16 pp.  
[Sample PDF](#) | [More details](#)

[Without Permission](#)  
© 2009, 15 pp.  
[Sample PDF](#) | [More details](#)

[Analyzing Research Activity Duration and Uncertainty in..](#)  
© 2012, 20 pp.  
[Sample PDF](#) | [More details](#)

[A Six-View Perspective Framework for System Secu](#)  
© 2010, 32 pp.  
[Sample PDF](#) | [More details](#)

### LEARN MORE:

[About IGI Global](#) | [Contact](#) | [Careers](#) | [Sitemap](#) | [FAQ](#)

### RESOURCES FOR:

[Librarians](#) | [Authors/Editors](#) | [Distributors](#) | [Instructors](#) | [Translators](#)

### MEDIA CENTER:

[Online Symposium](#) | [Blogs](#) | [Catalogs](#) | [Newsletters](#)

[Privacy Policy](#) | [Content Reuse Policy](#) | [Ethics and Malpractice](#)  
IGI Global - All Rights Reserved