

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel) : The Extraction of Near-Shore Bathymetry using Sentinel-2A Satellite Imagery: Algorithms and Their Modifications

Jumlah Penulis : 5 orang (Abdi Sukmono, Sentanu Aji, Fauzi Janu Amarrohman, Nurhadi Bashit, Lutfi Rangga Saputra)

Status Pengusul : penulis ke-1

Identitas Jurnal Ilmiah :

- a. Nama Jurnal : TEM JOURNAL - Technology, Education, Management, Informatics
- b. Nomor ISSN : ISSN:2217-8309, E-ISSN:2217-8333
- c. Vol, No., Bln Thn : Vol.11, No.1, February 2022
- d. Penerbit : UIKTEN - Association for Information Communication Technology Education and Science
- e. DOI artikel (jika ada) : 10.18421/TEM111-17
- f. Alamat web jurnal : https://www.temjournal.com/content/111/TEMJournalFebruary2022_150_158.html
- Alamat Artikel : https://www.temjournal.com/content/111/TEMJournalFebruary2022_150_158.pdf
- g. Terindex : Scopus, Q3

Kategori Publikasi Jurnal Ilmiah : ☒ Jurnal Ilmiah Internasional
 (beri ✓ pada kategori yang tepat) ☐ Jurnal Ilmiah Nasional Terakreditasi
☐ Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi jurnal (10%)	4	4	4
b. Ruang lingkup dan kedalaman pembahasan (30%)	11,5	11,5	11,5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	11,6	11,5	11,55
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	11,6	11,5	11,55
Total = (100%)	38,7	38,5	38,6
Nilai Pengusul = (60% x 38,6) = 23,16			

Semarang, 14 Juni 2022

Reviewer 2


 Bandi Sasmito, S.P., M.T.
 NIP. 197802062010121003
 Unit Kerja : Teknik Geodesi FT UNDIP

Reviewer 1


 Moehammad Awaluddin, S.T., M.T.
 NIP. 197408212005011001
 Unit Kerja : Teknik Geodesi FT UNDIP

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel) : The Extraction of Near-Shore Bathymetry using Sentinel-2A Satellite Imagery: Algorithms and Their Modifications

Jumlah Penulis : 5 orang (Abdi Sukmono, Sentanu Aji, Fauzi Janu Amarrohman, Nurhadi Bashit, Lutfi Rangga Saputra)

Status Pengusul : penulis ke-1

Identitas Jurnal Ilmiah :

- a. Nama Jurnal : TEM JOURNAL - Technology, Education, Management, Informatics
- b. Nomor ISSN : ISSN:2217-8309, E-ISSN:2217-8333
- c. Vol, No., Bln Thn : Vol.11, No.1, February 2022
- d. Penerbit : UIKTEN - Association for Information Communication Technology Education and Science
- e. DOI artikel (jika ada) : 10.18421/TEM111-17
- f. Alamat web jurnal : https://www.temjournal.com/content/111/TEMJournalFebruary2022_150_158.html
- Alamat Artikel : https://www.temjournal.com/content/111/TEMJournalFebruary2022_150_158.pdf
- g. Terindex : Scopus, Q3

Kategori Publikasi Jurnal Ilmiah : ☒ Jurnal Ilmiah Internasional
(beri ✓ pada kategori yang tepat) ☐ Jurnal Ilmiah Nasional Terakreditasi
☐ Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir Yang Diperoleh
	Internasional 40	Nasional Terakreditasi 	Nasional Tidak Terakreditasi 	
a. Kelengkapan unsur isi jurnal (10%)	4,00			4
b. Ruang lingkup dan kedalaman pembahasan (30%)	12,00			11,5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	12,00			11,6
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00			11,6
Total = (100%)	40,00			38,7
Nilai Pengusul = (60% x 38,7) = 23,22				

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi jurnal:

Struktur isi artikel tersusun secara lengkap yang mencakup Judul, Pendahuluan, Metode, Hasil dan Pembahasan, Kesimpulan dan Daftar Pustaka. Setiap bagian utama isi juga diulas secara detail dan saling terintegrasi. Artikel ini didukung dengan 20 referensi yang semuanya up to date dan terindeks pada basis data internasional.

2. Ruang lingkup dan kedalaman pembahasan:

Subtansi isi artikel membahas tentang komparasi tiga algoritma dalam penentuan Bathymetri dengan metode citra satelit yang kemudian dilakukan modifikasi algoritma sehingga didapatkan temuan baru sebagai *novelty*. Pembahasan modifikasi dilakukan secara detail dan terurai sehingga didapatkan modifikasi algoritma baru yang lebih teliti.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

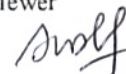
Data primer yang digunakan merupakan data yang valid dan terbaru sesuai dengan pengambilan data In situ tahun 2021. Data ini dilakukan pemodelan dengan data citra satelit dengan 3 algoritma terbaru yang telah dikembangkan oleh peneliti sebelumnya.

4. Kelengkapan unsur dan kualitas terbitan:

Sistem publikasi Jurnal sangat lengkap dengan menggunakan OJS yang didukung oleh tim editor dari akademisi dari berbagai universitas terkemuka. Jurnal ini diterbitkan oleh Asosiasi Teknologi Informasi Serbia sehingga dapat terjamin kualitas terbitannya.

Semarang, 14 Juni 2022

Reviewer



Moehammad Awaluddin, S.T., M.T.

NIP. 197408212005011001

Unit Kerja : Teknik Geodesi FT UNDIP

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel) : The Extraction of Near-Shore Bathymetry using Sentinel-2A Satellite Imagery: Algorithms and Their Modifications

Jumlah Penulis : 5 orang (Abdi Sukmono, Sentanu Aji, Fauzi Janu Amarrohman, Nurhadi Bashit, Lutfi Rangga Saputra)

Status Pengusul : penulis ke-1

Identitas Jurnal Ilmiah :

- a. Nama Jurnal : TEM JOURNAL - Technology, Education, Management, Informatics
- b. Nomor ISSN : ISSN:2217-8309, E-ISSN:2217-8333
- c. Vol, No., Bln Thn : Vol.11, No.1, February 2022
- d. Penerbit : UIKTEN - Association for Information Communication Technology Education and Science
- e. DOI artikel (jika ada) : 10.18421/TEM111-17
- f. Alamat web jurnal : https://www.temjournal.com/content/111/TEMJournalFebruary2022_150_158.html
- Alamat Artikel : https://www.temjournal.com/content/111/TEMJournalFebruary2022_150_158.pdf
- g. Terindex : Scopus, Q3

Kategori Publikasi Jurnal Ilmiah : ☒ Jurnal Ilmiah Internasional
 (beri ✓ pada kategori yang tepat) ☐ Jurnal Ilmiah Nasional Terakreditasi
☐ Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian Peer Review :

Komponen Yang Dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir Yang Diperoleh
	Internasional 40	Nasional Terakreditasi 	Nasional Tidak Terakreditasi 	
a. Kelengkapan unsur isi jurnal (10%)	4,00			4
b. Ruang lingkup dan kedalaman pembahasan (30%)	12,00			11,5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	12,00			11,5
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,00			11,5
Total = (100%)	40,00			38,5
Nilai Pengusul = (60% x 38,5) = 23,1				

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi jurnal:

Unsur isi manuskrip sangat lengkap yang terdiri dari abstract, introduction, method, result and discussion dan conclusion. Masing-masing bagian memiliki isi yang rinci dan sesuai dengan standar publikasi jurnal internasional.

2. Ruang lingkup dan kedalaman pembahasan:

isi manuskrip membahas tentang pengembangan algoritma SBD yang diperoleh dari modifikasi 3 algoritma dasar. Hasil dan diskusi diulas secara rigid dan dapat menunjukkan hasil algoritma baru yang dapat digunakan sebagai metode algoritma SBD yang teliti.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Data dan metode yang digunakan pada jurnal ini selaras dengan perkembangan teknologi geodesi dan geomatika yang menjadi bidang penulis serta didukung oleh 20 referensi yang up to date dan dijadikan sebagai landasan dalam diskusi/pembahasan.

4. Kelengkapan unsur dan kualitas terbitan:

Unsur editorial dan manajemen jurnal lengkap, didukung oleh penerbit Asosiasi Teknologi Informasi Serbia dan jurnal ini telah terindeks scopus Q3 dan WoS thomson reuters sehingga kualitas terbitan cukup terjamin.

Semarang, 14 Juni 2022

Reviewer 2

Bandi Sasmito, S.T., M.T.
 NIP. 197802062010121003
 Unit Kerja Teknik Geodesi FT UNDIP



1 of 1

[Download](#) [Print](#) [E-mail](#) [Save to PDF](#) [Add to List](#) [More... >](#)
TEM Journal • Open Access • Volume 11, Issue 1, Pages 150 - 158 • February 2022**Document type**

Article • Gold Open Access

Source type

Journal

ISSN

22178309

DOI

10.18421/TEM111-17

[View more](#)

The Extraction of Near-Shore Bathymetry using Sentinel-2A Satellite Imagery: Algorithms and Their Modifications

[Sukmono, Abdi^a](#) ; [Aji, Sentanu^a](#); [Amarrohman, Fauzi Janu^a](#); [Bashit, Nurhadi^a](#); [Saputra, Lutfi Rangga^b](#)
[Save all to author list](#)^a Department of Geodetic Engineering, Diponegoro University, Central Java, Semarang, 50275, Indonesia^b Geospatial Information Agency, West Java, Cibinong, Indonesia
[View PDF](#) [Full text options](#) [Export](#)
Abstract

Author keywords

SciVal Topics

Metrics

Abstract

Satellite-Derived Bathymetry (SDB) is one of the solution technologies for medium-scale bathymetry mapping in large areas. Various basic algorithms for bathymetry extraction with SDB have been developed. However, they require study and modification for different satellite imageries and different regional characteristics. In this study, the researchers explore three basic SDB algorithms which are often used, namely the Lyzenga algorithm, the Stumpf algorithm, and the Van Hengel & Spitzer (VHS) algorithm. These three algorithms are modified using the multilinear regression method with the 'average if' function to find out the in-situ depth using Sentinel-2A satellite imagery. These three algorithms can estimate the depth of shallow water bathymetry effectively up to a depth of 20 m. The accuracy test on the extraction results of the modification of the three basic algorithms proves to be able to increase the accuracy of the SDB depth estimation in the depth range of 0 – 20 m to an accuracy of 1.888 m for the Lyzenga algorithm, 2.093 m for the Stumpf algorithm, and 2.868 m for the VHS

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)**Related documents**

Bathymetry extraction of empirical models using SPOT 7 satellite imagery

 Setiawan, K.T. , Ginting, D.N.B.R. , Manessa, M.D.M. (2020) *IOP Conference Series: Earth and Environmental Science*

Development of bathymetry extraction model from SPOT 7 satellite image

 Setiawan, K.T. , Ginting, D.N.B.R. , Winarso, G. (2019) *IOP Conference Series: Earth and Environmental Science*

Bathymetry Estimation by Orbital Data of OLI Sensor: A Case Study of the Rio Grande Harbor, Southern Brazil

 Alves, D.C.L. , De Almeida Espinoza, J.M. , Albuquerque, M.D.G. (2018) *Journal of Coastal Research*
[View all related documents based on references](#)

Find more related documents in Scopus based on:

[Authors >](#) [Keywords >](#)



Source details

TEM Journal

Open Access ⓘ

Scopus coverage years: from 2017 to Present

Publisher: UIKTEN - Association for Information Communication Technology Education and Science

ISSN: 2217-8309 E-ISSN: 2217-8333

Subject area: Social Sciences: Education Computer Science: Computer Science (miscellaneous) Business, Management and Accounting: Management of Technology and Innovation View all ▾

Source type: Journal

CiteScore 2021 1.6 ⓘ

SJR 2021 0.245 ⓘ

SNIP 2021 0.675 ⓘ

[View all documents >](#) [Set document alert](#) [Save to source list](#) [Source Homepage](#)

CiteScore CiteScore rank & trend Scopus content coverage

i Improved CiteScore methodology

CiteScore 2021 counts the citations received in 2018-2021 to articles, reviews, conference papers, book chapters and data papers published in 2018-2021, and divides this by the number of publications published in 2018-2021. [Learn more >](#)

×

CiteScore 2021 ▾

1.6 = $\frac{1,303 \text{ Citations 2018 - 2021}}{808 \text{ Documents 2018 - 2021}}$

Calculated on 05 May, 2022

CiteScoreTracker 2022 ⓘ

1.6 = $\frac{1,171 \text{ Citations to date}}{745 \text{ Documents to date}}$

Last updated on 06 June, 2022 • Updated monthly

CiteScore rank 2021 ⓘ

Category	Rank	Percentile
Social Sciences		
Education	#705/1406	49th
Computer Science		
Computer Science (miscellaneous)	#57/90	37th
Business,		

TEM


[Home](#)
[Guide for authors](#)
[Submit Article](#)
[Editorial Board](#)
[Archives](#)
[Contact](#)
TEM JOURNAL - Technology, Education, Management, Informatics

Is an Open Access, Double-blind peer reviewed journal that publishes articles of interdisciplinary sciences:

- Technology,
- Computer and informatics sciences,
- Education,
- Management.

We are pleased to announce our partnership with renowned publisher:



All published papers will be distributed through powerful ProQuest services.

All published papers are included in Web of Science



All published papers in the TEM Journal are included in SCOPUS

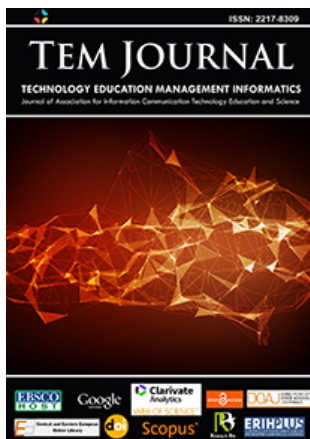


ELSEVIER

UIKTEN has partnered with PORTICO to preserve the journal's content.


[Publication Ethics and Publication Malpractice Statement](#)
[Open Access, copyright and APC](#)
[Peer Review Policy](#)
[Digital preservation policy](#)

Current issue :



Vol. 11, No. 2, May 2022.

TEM Journal is covered or selected for coverage in the following:

Web of Science | Clarivate Analytics - Master Journal List

 (Emerging Sources Citation Index) - [link](#)

 SCOPUS - [link](#)

 Directory of Open Access Journals (DOAJ) - [link](#)

 CEEOL - Central and Eastern European Online Library - [link](#)

 EBSCO bibliographic databases - [link](#)

 Google Scholar - [link](#)

 Norwegian Register for Scientific Journals, Series and Publishers - [link](#)

 MIAR - Information Matrix for the Analysis of Journals - [link](#)

 TIB - German National Library of Science and Technology - [link](#)

 ERIH PLUS - [link](#)

etc.

 Published by: UIKTEN - Association for Information Communication Technology Education and Science, Serbia. - [link](#)

Frequency: 4/year

Peer Reviewed: Yes

TEM JOURNAL is published both in Print and Electronic format.

ISSN: 2217-8309 (Print).

eISSN: 2217-8333 (Online).

 email: office@temjournal.com

Portico's unique, trusted process ensures that the content of the TEM Journal will remain accessible and usable for researchers, scholars, and students in the future.



Scopus®

DOAJ

 ERIH PLUS
EUROPEAN REFERENCE INDEX FOR THE
HUMANITIES AND SOCIAL SCIENCES

TEM Journal, Vol. 11, No. 2, May 2022:

 Title: *Data Analysis of Short - term and Long - term Online Activities in LMS*

Authors: Carmen Carrión

DOI: 10.18421/TEM112-01

[| abstract | full text | how to cite |](#)


[Home](#)[Instructions](#)[Submit Article](#)[Editorial Board](#)[Archives](#)[Contact](#)

TEM JOURNAL - Technology, Education, Management, Informatics

Editorial Board:

Editor-in-Chief:
Prof. dr Camil Sukic

Lector:
Irma Halilovic

Members:

Prof. dr Keiichi Kaneko
(Tokyo University of Agriculture and Technology | TUAT · Department of Computer and Information Sciences, Tokyo, **Japan**)

Prof. dr Klaus Tochtermann
(ZBW - Leibniz Information Centre for Economics, **Germany**)

Prof. dr Gillich Gilbert-Rainer
(Eftimie Murgu University in Resita, Department of Mechanical Engineering, **Romania**)

Samir Khatir, PhD
(Technologieparks, Ghent University, **Belgium**)

Prof. dr Álvaro Rocha
(University of Lisbon - ISEG, Lisbon, **Portugal**)

Asst. Prof. Enes Sukic
(UIKTEN - Association for Information Communication Technology Education and Science, Serbia)

Erica Magagnini, PhD
(Università Politecnica delle Marche, Italy)

Maria José Sousa, PhD
(ISCTE-Instituto Universitario de Lisboa, Portugal)

Prof. Dr. Khaled Shaalan
(Faculty of Engineering & IT, The British University in Dubai, UAE)

Asst. Prof. Isaac Lera Castro
(University of the Balearic Islands, Department of Mathematic and Computer Sciences, Spain)

Le Thanh Cuong, PhD
(Faculty of civil engineering, Ho Chi Minh City Open University, Vietnam)

Prof. dr Borut Buchmeister
(University of Maribor, Slovenia)

Ing. Darina Dupláková, PhD
(Faculty of Manufacturing Technologies with a seat in Prešov,

[Publication Ethics and
Publication Malpractice Statement](#)

[Open Access and copyright](#)



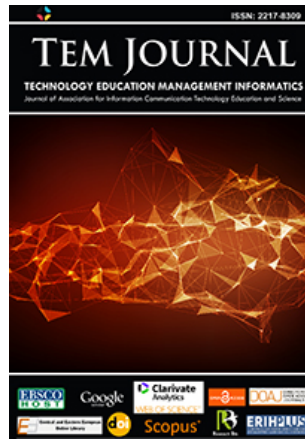




Central and Eastern European Online Library



TEM

[Home](#)[Instructions](#)[Submit Article](#)[Editorial Board](#)[Archives](#)[Contact](#)**TEM Journal, Vol.11, No.1, February 2022:**[Open Access and copyright](#)[Publication Ethics and
Publication Malpractice Statement](#)

WEB OF SCIENCE™

Scopus®

DOAJ DIRECTORY OF
OPEN ACCESS
JOURNALS

Google scholar

TIB | GERMAN NATIONAL LIBRARY OF
SCIENCE AND TECHNOLOGYCentral and Eastern European
Online Library**Title:** *Issues in the Disclosure of Financial Information by Multinational Enterprises***Authors:** Svetlozar Stefanov, Daniela Georgieva, Julian Vasilev**DOI:** 10.18421/TEM111-01[. | abstract | full text | how to cite |](#)**Title:** *Diagnostics of the State of Safety-Oriented Enterprise Management System Using Neural Networks***Authors:** Nataliia Havlovska, Hanna Koptieva, Olena Babchynska, Yevhenii Rudnichenko, Viktor Lopatovskiy, Vadym Prytys**DOI:** 10.18421/TEM111-02[. | abstract | full text | how to cite |](#)**Title:** *Modeling of Creep Effect in DMSP-5 Fluidic Muscle***Authors:** Monika Trojanová, Alexander Hošovský, Tomáš Čakurda**DOI:** 10.18421/TEM111-03[. | abstract | full text | how to cite |](#)**Title:** *Linear Differential Driven Wheel Mobile Robot Based on MPU9250 and Optical Encoder***Authors:** Ilham Rustam, Nooritawati Md Tahir, Ahmad Ihsan Mohd Yassin, Nurbaiti Wahid, Abdul Hafiz Kassim**DOI:** 10.18421/TEM111-04[. | abstract | full text | how to cite |](#)

Title: *Random Forest Regression to Predict Catalyst Deactivation in Industrial Catalytic Process*

Authors: Wisnu Hafi Hanif, Fergyanto E Gunawan

DOI: 10.18421/TEM111-12

[. | abstract | full text | how to cite |](#)

Title: *Mobile Marketing in Business Sustainability: A Bibliometric Analysis*

Authors: Wan Mohd Hirwani Wan Hussain, Norzalita Abdul Aziz

DOI: 10.18421/TEM111-13

[. | abstract | full text | how to cite |](#)

Title: *Transforming Scientific Results into Educational Materials - Added Value of a Research Project*

Authors: Yanita Chernogorova, Turgay Kalinov, Nikolay Dukov, Kristina Bliznakova, Alexander Zlatarov, Nikola Kolev, Zhivko Bliznakov

DOI: 10.18421/TEM111-14

[. | abstract | full text | how to cite |](#)

Title: *A Systematic-Functional Approach in Managing Innovative Development of Construction Enterprises in Ukraine*

Authors: Iryna Gontareva, Mainka Marcel Kurt, Oleksandr Dorokhov, Roman Rusin-Grinik, Nazar Galayko

DOI: 10.18421/TEM111-15

[. | abstract | full text | how to cite |](#)

Title: *CRM Systems for Small Businesses: The Role in the Digital Transformation and New Opportunities During COVID-19*

Authors: Lilia Matraeva, Ekaterina Vasiutina, Nataliya Korolkova

DOI: 10.18421/TEM111-16

[. | abstract | full text | how to cite |](#)

Title: *The Extraction of Near-Shore Bathymetry using Sentinel-2A Satellite Imagery: Algorithms and Their Modifications*

Authors: **Abdi Sukmono**, Sentanu Aji, Fauzi Janu Amarrohman, Nurhadi Bashit, Lutfi Rangga Saputra

DOI: 10.18421/TEM111-17

[. | abstract | full text | how to cite |](#)

Title: *Identification of Customer's Preferences as One of the Main Activities of Destination Management*

Authors: Miriam Garbarova, Lukas Vartiak

DOI: 10.18421/TEM111-18

[. | abstract | full text | how to cite |](#)

Title: *Proposed Solution for Adaptation of the Block in TPP Bitola using Gas Turbine Combined Cycle*

Authors: Blagoj Dimovski, Sevde Stavreva, Cvete Dimitrieska, Igor Andreevski

The Extraction of Near-Shore Bathymetry using Sentinel-2A Satellite Imagery: Algorithms and Their Modifications

Abdi Sukmono¹, Sentanu Aji¹, Fauzi Janu Amarrohman¹,
Nurhadi Bashit¹, Lutfi Ranga Saputra²

¹Department of Geodetic Engineering, Diponegoro University, Semarang, 50275, Central Java, **Indonesia**

²Geospatial Information Agency, Cibinong, West Java, Indonesia

Abstract - Satellite-Derived Bathymetry (SDB) is one of the solution technologies for medium-scale bathymetry mapping in large areas. Various basic algorithms for bathymetry extraction with SDB have been developed. However, they require study and modification for different satellite imageries and different regional characteristics. In this study, the researchers explore three basic SDB algorithms which are often used, namely the Lyzenga algorithm, the Stumpf algorithm, and the Van Hengel & Spitzer (VHS) algorithm. These three algorithms are modified using the multilinear regression method with the 'average if' function to find out the in-situ depth using Sentinel-2A satellite imagery. These three algorithms can estimate the depth of shallow water bathymetry effectively up to a depth of 20 m. The accuracy test on the extraction results of the modification of the three basic algorithms proves to be able to increase the accuracy of the SDB depth estimation in the depth range of 0 – 20 m to an accuracy of 1.888 m for the Lyzenga algorithm, 2.093 m for the Stumpf algorithm, and 2.868 m for the VHS algorithm.

Keywords - bathymetry, Sentinel-2A, near-shore, water depth.

DOI: 10.18421/TEM111-17

<https://doi.org/10.18421/TEM111-17>

Corresponding author: Abdi Sukmono,
Department of Geodetic Engineering, Diponegoro
University, Semarang, 50275, Central Java, Indonesia.

Email: abdisukmono@lecturer.undip.ac.id

Received: 04 October 2021.

Revised: 18 January 2022.

Accepted: 24 January 2022.

Published: 28 February 2022.

 © 2022 Abdi Sukmono et al; published by UIKTEN. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDeriv 4.0 License.

The article is published with Open Access at www.temjournal.com

1. Introduction

Coastal areas possess a highly important role in economic development for maritime countries. These areas have biological biodiversity and abundant economic activity so that they may serve as an economic booster [1]. The management of activities and development planning in coastal areas needs the support of good spatial data. One of the most important spatial data is near-shore bathymetry data. Bathymetry is important information about water depth and underwater topography [2]. According to Manessa et al., bathymetry data is important for ship traffic, conservation, coastal zoning, and other environmental issues [3].

In general, bathymetry maps are generated by a series of hydrographic surveys starting from tidal surveys to generalization using a single-beam echosounder or multi-beam echosounder mounted on a survey vessel to produce sea depth data. This method can generate very accurate bathymetry estimates, especially in clear seawater [4]. In addition, there is also an Airborne Lidar Bathymetry (ALB) technology. It can also measure sea depth effectively in the coastal zone [5]. However, both methods require quite expensive costs and are time-consuming for a large area. Frankly, maritime countries need to update their bathymetry maps regularly. Therefore, this is a challenge, especially for maritime countries that have long coastlines, such as Canada, Indonesia, Denmark, Russia, and the Philippines.

Remote sensing technology can be used as an alternative to obtaining bathymetry data, especially for shallow water [6]. This technique/method is known as Satellite-Derived Bathymetry (SDB). SDB can provide an opportunity to perform bathymetry mapping quickly, effectively, and efficiently [7]. In addition to the advantages already mentioned, SDB is also a method that does not require high costs in its operation to obtain water depth data over a large area

Issues in the Disclosure of Financial Information by Multinational Enterprises

Svetlozar Stefanov, Daniela Georgieva, Julian Vasilev

University of Economics Varna, 77 Knyaz Boris I blvd, Varna, **Bulgaria**

Abstract – The aim of this paper is to explore issues of investment presentation, financial instruments, earnings disclosure indicators and software aspects of accounting for multinational enterprises. The study is based on the public financial statements of the Solvay Group. The main approach is using two viewpoints – accounting view of financial information and IT view of financial information. The results of this study are useful for other multinational enterprises that prepare their financial statements in accordance with International Financial Reporting Standards and use big data in accounting.

Keywords – investments, financial instruments, fraud detection, accounting information disclosure, ERP systems.

1. Introduction

This paper attempts to address key issues related to the presentation and disclosure of information in the financial statements of multinational enterprises. The aim of this paper is to explore issues of investment presentation, financial instruments, earnings disclosure indicators and software aspects of accounting for multinational enterprises.

DOI: 10.18421/TEM111-01

<https://doi.org/10.18421/TEM111-01>

Corresponding author: Julian Vasilev,
University of Economics Varna, 77 Knyaz Boris I blvd,
Varna, Bulgaria.

Email: vasilev@ue-varna.bg

Received: 12 November 2021.

Revised: 11 January 2022.

Accepted: 18 January 2022.

Published: 28 February 2022.

 © 2022 Svetlozar Stefanov, Daniela Georgieva & Julian Vasilev; published by UIKTEN. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 License.

The article is published with Open Access at
<https://www.temjournal.com/>

The study is based on the public financial statements of the Solvay Group, which has been present in Bulgaria since 1997, with about 500 employees working in four factories: Solvay Sodi, Provadsol, Devnya Varovik and Solvay Bulgaria.

Solvay Sodi is the largest soda ash production plant in Europe, with a capacity of around 1.6 million tons per year. Provadsol's main activity is related to the production of brine (aqueous solution of sodium chloride - NaCl). Devnya Varovik produces the raw materials necessary to produce soda ash, cement production and the production of quarry building materials. Solvay Bulgaria EAD, as part of the Solvay Group, is responsible for the marketing and sales of soda ash, bicarbonate of soda and calcium chloride.

2. Methods of Measuring and Presenting Investments in Financial Statements

In international practice, different methods of valuation and presentation of equity investments are used depending on the percentage of the issuer's equity held by the investor. The differences in the methods are determined by the relationship between the investor and the entity whose shares are acquired.

Where the investor acquires more than 50% of the voting shares of the undertaking whose shares are acquired, he may exercise control over that undertaking. In this case, the two undertakings are identified as parent and subsidiary undertakings. Such investments are presented in the financial statements by applying different methods of consolidation within the meaning of the IFRS 10 Consolidated Financial Statements. In this way, the financial statements of two or more legally separate entities acting jointly in economic and financial terms are consolidated. The purpose of such consolidation comes down to the need to obtain information about the financial position, financial performance and changes therein of the entities operating as an economic group.

In the practice of the developed countries, it is accepted that long-term investments in associates are a very significant part of the investment policy of the enterprises, and therefore these investments are

Diagnostics of the State of Safety-Oriented Enterprise Management System Using Neural Networks

Nataliia Havlovska¹, Hanna Koptieva², Olena Babchynska³,
Yevhenii Rudnichenko¹, Viktor Lopatovskyi¹, Vadym Prytys¹

¹Khmelnytsky National University, Khmelnytsky, **Ukraine**

²National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

³Vinnitsia institute of Trade And Economic of The Kyiv National University of Trade And Economic University, Ukraine

Abstract – Enterprise management is based on the need to make and justify management decisions that contribute to its development. It is almost impossible to determine the risk of a particular managerial decision, and excessive risk in the implementation of individual projects can lead to loss of business. Therefore, management faces the need to find a balance between benefits and risks, at which, on the one hand, it will be possible to develop a company and, on the other hand, adhere to postulates of safety-oriented management. Since management decisions cannot be foreseen for all possible situations and combinations of risk-benefit ratios, a universal model is proposed. It implies a golden ratio, depending on the limited number of current conditions, that would satisfy an enterprise management from the standpoint of sufficient justification on a decision. The article proposes a probabilistic neural network architecture and Matlab parameters of a probabilistic neural network for diagnosing the states of a safety-oriented control system. The proposed model in the form of a probabilistic neural network generates a response to input data on previous month under estimation, and forms an optimal state for a next month.

Keywords – managerial decision, economic security, risk, benefit, neural network.

1. Introduction

Economic development in most countries is characterized by instability in economic, political and other areas that directly affect the conditions of enterprises' operation and performance. In turn, the crisis of external environment and imperfection of enterprise' s internal processes is reflected in the system of their economic security, forcing management to seek new approaches to management and decision-making. One of such approaches is a safety-oriented approach, which is aimed not only at enterprise effectiveness, but also takes into account its safety operation.

Safety-oriented management is not an end in itself of an organization, goals are determined by owners in accordance with a company strategy and vision of its basic processes' development. The assertion of importance of economic security is beyond doubt in the face of emerging threats and dynamic changes in socio-economic situation in most countries. At the same time, the absolute leveling of economic efficiency is not entirely appropriate in conditions of high competition on the market. In this situation, in the context of the study, it is more appropriate to talk about a balanced approach between safety and cost-effectiveness, taking into account specifics of markets and industries.

In modern business conditions, it is incorrect to reject the task of ensuring the enterprise profitability, but in any case, the basis for decision-making and guidelines in the enterprise should be a combination of criteria to ensure both profitability and safety of its activities.

The implementation of the concept of safety-oriented management in practice involves compliance with its main provisions, considering it is

DOI: 10.18421/TEM111-02

<https://doi.org/10.18421/TEM111-02>

Corresponding author: Yevhenii Rudnichenko,
Khmelnytsky National University, Khmelnytsky, Ukraine.

Email: e.m.rudnichenko@gmail.com

Received: 22 June 2021.

Revised: 14 January 2022.

Accepted: 21 January 2022.

Published: 28 February 2022.

 © 2022 Nataliia Havlovska et al; published by UIKTEN. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 License.

The article is published with Open Access at www.temjournal.com