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1.	<b>Authors:</b>	<b>Sadek Bendago, Esam Elsheh</b>	1-6
	<b>Paper Title:</b>	<b>Component Oriented Simulation Environment for Dynamic System Analysis and Testing</b>	
	<p><b>Abstract:</b> Computer simulation of dynamic systems lies at the center of engineering practice. Automatic control system design and testing is one of the fields where simulation programs are extensively used at various development phases. Older approach to build simulation programs was procedural one. Recently, the attention shifts toward Object Oriented (OO) approach. The main reason for this shift is to get benefits of reusability and adoptability as the main OO features. This paper examines an OO based modeling and simulation framework that could be used to construct various dynamic system simulations including real-time ones. Both adoptability and reusability are considered with paying attention also to extension of the number of simulation developers to include “old fashion” and “non-OO” programmers. To illustrate the usage of such an approach, a typical flight control system is used as an example. In this research paper the relevant functionalities of the flight control system are scattered among components. These components have the capability to interact to produce simulations.</p> <p><b>Keywords:</b> systems simulation; object oriented programming, flight simulation.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. K.J. Hayhurst, and C. M Holloway, “Considering Object Oriented Technology in Aviation Applications,” Digital Avionics Systems, 2003.</li> <li>2. C. Yun and X. Li, “Design of UAV Flight Simulation Software Based on Simulation Training Method,” WSEAS Trans. on Info. Science. and Applications, vol.10, no. 2, pp.37-46, 2013.</li> <li>3. C. Yun and X. Li, “Research on UAV Flight Dynamic Simulation Model Based on Multi-Agent,” Journal of Software, vol. 9, no. 1, pp. 121-128, 2014.</li> <li>4. M. Madden, “Examining Reuse in LaSRS++-Based Projects,” AIAA Modeling and Simulation Technologies, 2001.</li> <li>5. S. Bendago, “Computer Simulation Environment for Flight Control System Development,” PhD thesis, School of Electrical Engineering, University of Belgrade, 2004.</li> <li>6. S. Derry and J.M. Maddalon, “Implementing Dynamic System Models in the ASSET Simulation Framework,” AIAA Modeling and Simulation Technologies Conference, 2000.</li> <li>7. P. S Kenney, “Rapid Prototyping of an Aircraft Model in an Object-Oriented Simulation,” AIAA Modeling and Simulation Technologies Conference, 2003.</li> </ol>		
2.	<b>Authors:</b>	<b>Th. Kiranbala Devi, Soibam Sandhyarani Devi, Christina Usham</b>	7-13
	<b>Paper Title:</b>	<b>Seismic Vulnerability Assessment of Existing Buildings in Imphal City</b>	
	<p><b>Abstract:</b> Frequent seismic activity in various parts of India has jeopardized the existing building stock and hence necessitated their vulnerability assessment. Such assessments are helpful for the administrators to adopt appropriate measures that can reduce the loss of human lives and properties. Imphal is a growing city in the northeast part of India, which falls under zone V. Most recent construction in the city consists of poorly designed and constructed buildings. The older buildings, even constructed in compliance with relevant standards at that time, may not comply with the more stringent specifications of the latest standards. Further, with high degree of population density in the urban, 998/Km<sup>2</sup> in Imphal West and 643/Km<sup>2</sup> in Imphal East, while the average density of population of the state of Manipur recorded at 115/Km<sup>2</sup> and concentration of houses and buildings in the area consisting of significant numbers of liveable and dilapidated houses (Census of India- 2011), assessment of seismic vulnerability of existing buildings is a matter of great importance. The present study deals with the seismic vulnerability assessment of the existing buildings in Imphal. A field survey of some of the existing buildings in Imphal was carried out and a preliminary assessment of seismic vulnerability was made. The Rapid Visual Screening (RVS) was done by using RVS form by Prof. Arya. One of the buildings which were found to be vulnerable from RVS was evaluated using numerical analysis, using SAP 2000 in order to assess their vulnerability for Simplified Vulnerability Assessment (SVA). The deficient members observed from the output are suggested for strengthening and retrofitting.</p> <p><b>Keywords:</b> Vulnerability Assessment, RVS, SVA, Modelling, SAP, Retrofitting</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. ATC-40 (1996): Seismic Evaluation and Retrofit of Concrete No. SSC 96-01, Applied Technology Council, California.</li> <li>2. AlpaSheth (2002): Seismic Retrofitting by Conventional Methods The Indian Concrete Journal, Vol.76, Number 8, August 2002. Pp.489-495.</li> <li>3. Dr. Anand S. Arya, FNA, FNAE, FIE (Professor Emeritus, Dept. of Eq. Engineering, IIT Roorkee) National Seismic Advisor (EVR) Ministry of Home Affairs, SEISMIC EVALUATION AND STRENGTHENING OF EXISTING REINFORCED CONCRET BUILDINGS – Guidelines, Prepared Under GOI – UNDP Disaster Risk Management Programme.</li> <li>4. Dr. Th. Kiranbala Devi (2011): Earthquake Disaster Mitigation, Proceedings of International Conference on Advances in Materials and Techniques for Infrastructure Development (AMTD 2011), NIT Calicut, India 28-30 September 2011, pp. 1-8.</li> <li>5. Dr. Th. Kiranbala Devi, N. Monika Chanu, S. Satyakumar Singh and T. Bishworjit Singh(2013):SEISMIC RETROFITTING OF STRUCTURE BY CONVENTIONAL METHOD, proceedings of National Conference on Geotechnical and Geo-environmental Aspects of Waste and their utilization in infrastructure projects’, Guru Nanak Dev, Ludhiana, Punjab,15-16 Feb,2013.</li> <li>6. Dr. D.K.Paul(2006): Earthquake Resistant Design,IS:1893-2002 CODE. Department of Earthquake Engineering, IIT Roorkee, Roorkee,247667.</li> <li>7. FEMA (1997): “FEMA-273- NEHRP Guidelines for the Seismic Rehabilitation of Buildings”, Federal Emergency Management Agency, Washington DC, USA.</li> <li>8. Guidelines for Retrofitting of Concrete Structure (1999), Concrete library, No. 95, published by JSCE, September 1999, pp. 203-210.</li> <li>9. IS: 875-1987(Part-2)”code of practice for design loads for buildings and structures-Part-2 Imposed loads”, BIS, New Delhi,1987.</li> <li>10. IS 1893 (Part 1): 2002,” Criteria for Earthquake Resistant Design of Structures”, Bureau of Indian Standards, New Delhi.</li> </ol>		

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