It is necessary to emphasize: control of formation TO ecological efficiency, control of a current level of formed it parameters should have complex system character [5].

Conclusions

1. The current position of OS requires acceptance of extraordinary measures for resolute decrease of level of harmful influence on it from industry.
2. Control of functioning TO is the productive tool defining a degree of its harmful influence on environment. Increase of quality of TO control reduces a level of this influence.
3. Main task of automatic control system by any TO is keeping of the set level its ecological efficiency.
4. The result of the control over a current level of ecological efficiency TO should be the main parameter of current level object' TE.
5. In some cases expediently to supervise and to control a current level of several ecological efficiency parameters.
6. In current conditions there was the ecological conditions, which force to apply a direct control of ecological efficiency level of the majority TO.
7. When you assign a resource TO is necessary to ensure the ratio of its components, with which the largest component is environmental one.
8. Then automatic control system of TO is an important means of ensuring a high level of its ecological efficiency.

Referenses

[1] Voinova S.O. Mozhlivosti upravlinnya efektivnistyu tehnichnih ob'ektyiv / Trudyi 15-y Mezhdunar. n.-t. konf. «Fizicheskie i kompyuternyie tehnologii», Harkov, 2-3 dekabrya 2009 g. – Harkov: HNPK «FED», 2009. - S. 93-95
[2] Voinova S.A. O podhode k upravleniyu tehnologicheskoy effektivnostyu sozdavaemyih tehnicheskih ob'ektov / Mizhnarodniy zhurnal «Avtomatizatsiya tehnologichnih i biznes-protsesiv», 2012, № 11, 12. – Odesa: ONAHT, 2012.- S. 26-28.
[3] Voinova S.O. Pro aktualnest upravlennya ekologechnoyu efektivnestyu tehnechnih ob'ektiv / «Energetika ta elektrifIkatsiya», №1, 2012.- S. 64-67.
[4] Voinova S.A. Balans tehnologicheskoy effektivnosti funktsionirovaniya tehnicheskih ob'ektov v realnyih proizvodstvennyih usloviyah / Energetika ta elektrifIkatsiya, 2015, №. 8.- S. 35 – 41.
[5] Voinova S.O. Sistemniy pidhid do upravlinnya tehnologichnoyu efektivnistyu tehnichnih ob'ektiv / Fizicheskie i kompyuternyie tehnologii.- Trudyi 17-y Mezhdunarodnoy nauchno-tehnicheskoy konferentsii, 20-21 sentyabrya 2011g.- Harkov: HNPK «FED», 2011.- S.105-108.

Received by edition: 10.04.2016. Approved for the press: 6.06.2016

UDC 76.01.85

DEVELOPMENT OF PRINCIPLES OF DCNET AND FLASH ENVIRONMENTS INTERACTION

A. V. Denisenko assistant[1]
A. A. Gursky Ph.D. Art. Lecturer[2]

DOI: 10.15673/

Annotation

The question of implementation of the interface between the DCNET and Flash media is examined. Usage of the interface-based DCNET environment allows to reduce time and material costs for the development t and study of complicated technological system and to increase functional imaging capabilities compared to ActionScript.

Keywords

Discrete-continuous net, programming environment, xml, DCNET, Flash.

For the correct interaction between the two media with different hierarchies, and action principles, data transmission format between systems should be standardized. One of the main qualities of the data format must be the error messages information drive. For easy "correction" data format should be visually easy to break into pieces. Modern transmission format are html, css, xhtml, xml. For data transmission suitable one is only xml format. Though it similar to html, xhtml, it stillhas properties that are unique and significantly facilitate the development of data transmission algorithm. There is a clear error announcement system, transparent data view, modern logic, unlimited number of parameters, standard tags absence.

The schematic of both DCNET and Flash technologies is shown in Fig. 1.

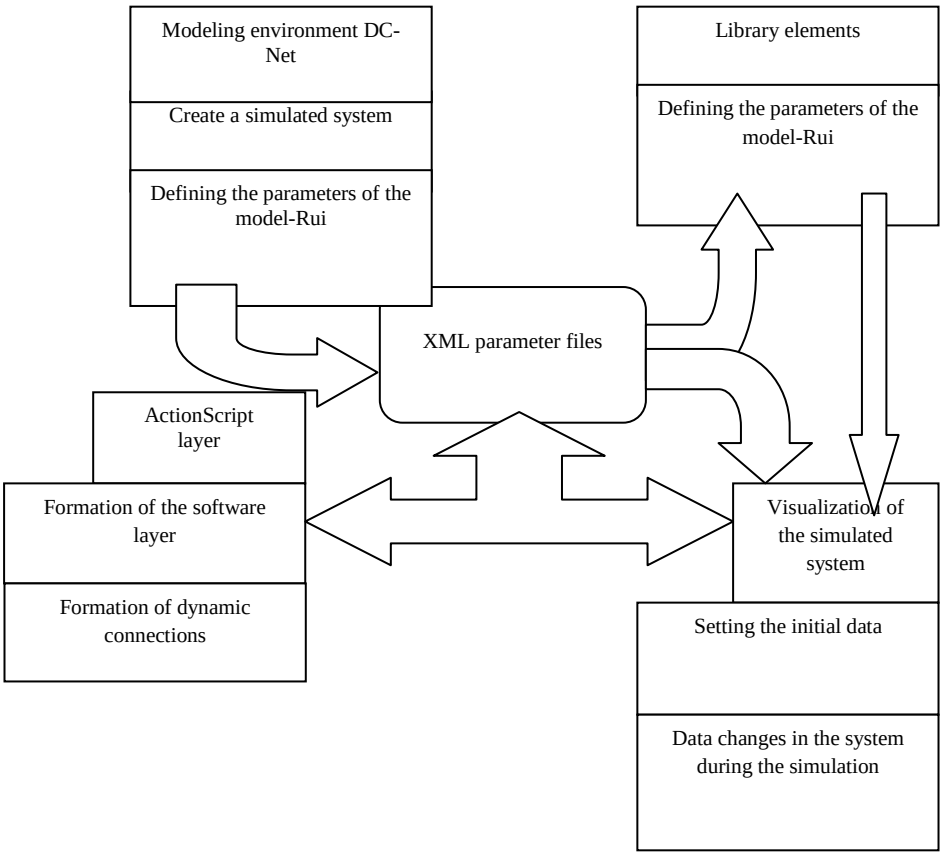


Fig. 1 – The scheme of merger of two DCNET and Flash technologies.

Both technologies interact via XML language, involved in this case, to interface between two software environments organising. Data are exchange between software DCNET environment on the compiled model level and it's current state, place in the simulation system process. Such interaction completely allows to determine the model behavior , described by familiar software means (discrete language - continuous networks), this eliminating the need for a program with object - oriented ActionScript language for every model[2].

In this case Flash is used only for technological process visualisation. Adding to the DCNET structure - Flash allows to reach interactive communication between them so that the controls system in the animated part of the Flash-application would influenced the course of the simulation[1].

The flowchart communications between Flash DCNET and shown in Fig. 2.

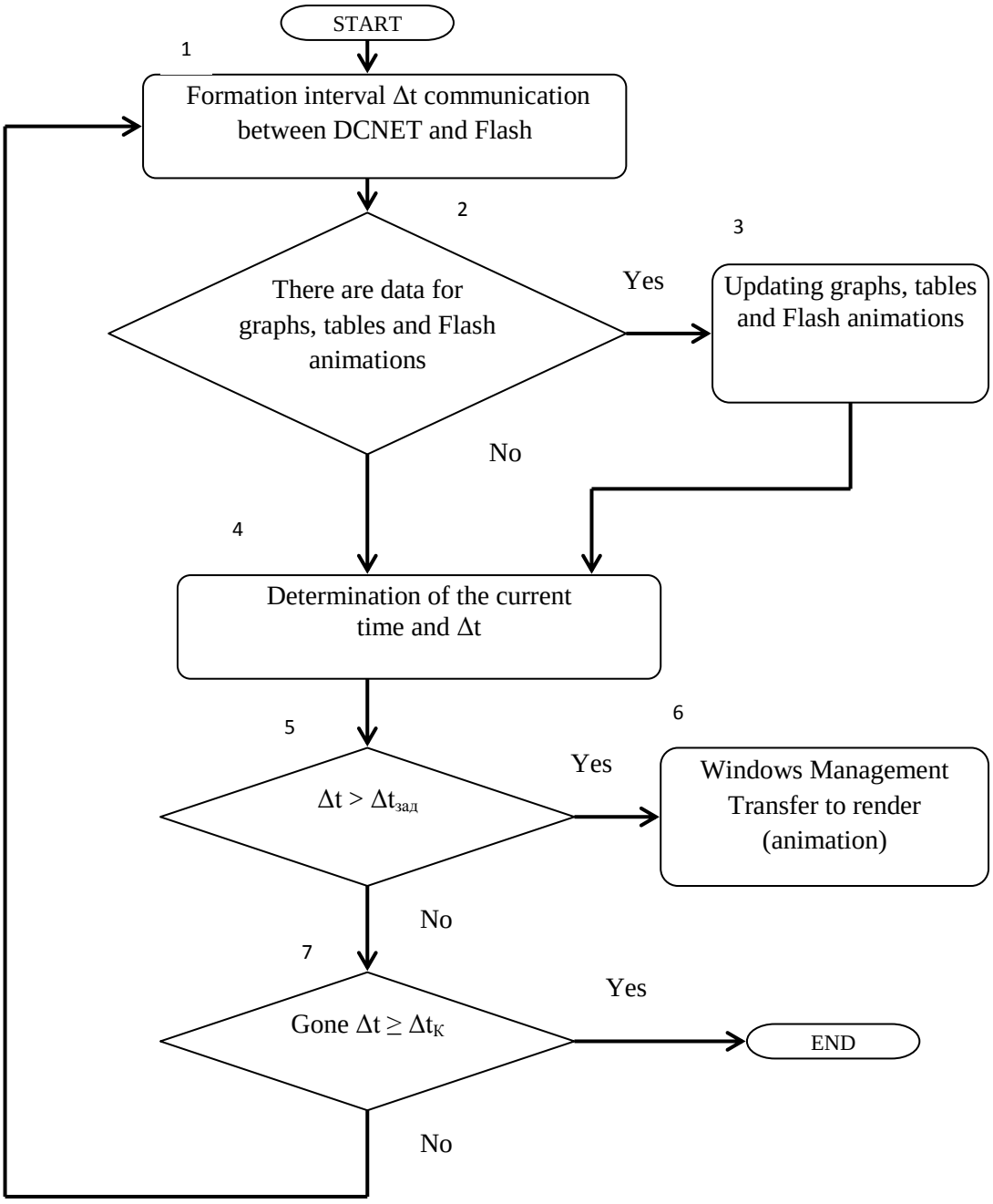


Fig. 2 – Flow diagram of a data exchange between DCNET and Flash.

Any element in the diagram has such properties as type and depending on its type, it can have any number of parameters. XML format is now the most common data transmission format. To effectively operate the data, it is necessary to take into account the format basic techniques, peculiarities of its behavior and structure of the XML data object itself. XML usage is very convenient to describe the structured data[2].

This parametric life has to carry a classifier element, its properties and technical specifications. Data processing in the visualization environment must quickly handle all the time characteristics and quickly reflect them. If it necessary to use the local system, it's not sensible to embed data compression algorithm, since for the deployment of the compiled data file CPU time is wasted.

If we do not use compression algorithm, it is necessary to decide how long you need to reboot. If you look at modern video formats you can see that the viewer sees only 25 frames per second, so we can conclude that a reboot should be 1000/25 every 40ms.

The time between loads almost equal to 40 ms, during which time we have to load xml, to process and display the required data. The less nested tags exist, the faster is the processing, because the program cycle for each attachment treatment is used. Record parameters, to exclude investments, we will take with the tag attributes.

Develop an xml file structure.

In tag title there are no xml limits, in flash there are many functions and system settings, so you should not use the system parameters and names when writing a parametric file. One simple solution is to supplement the end of a text title with any text.

We declare the main tag name "press".

Each internal tag will have the File name, so that we can understand whether it carries a tag information. This can be used in the system setting up process and bug fixes. Xml file example[2].

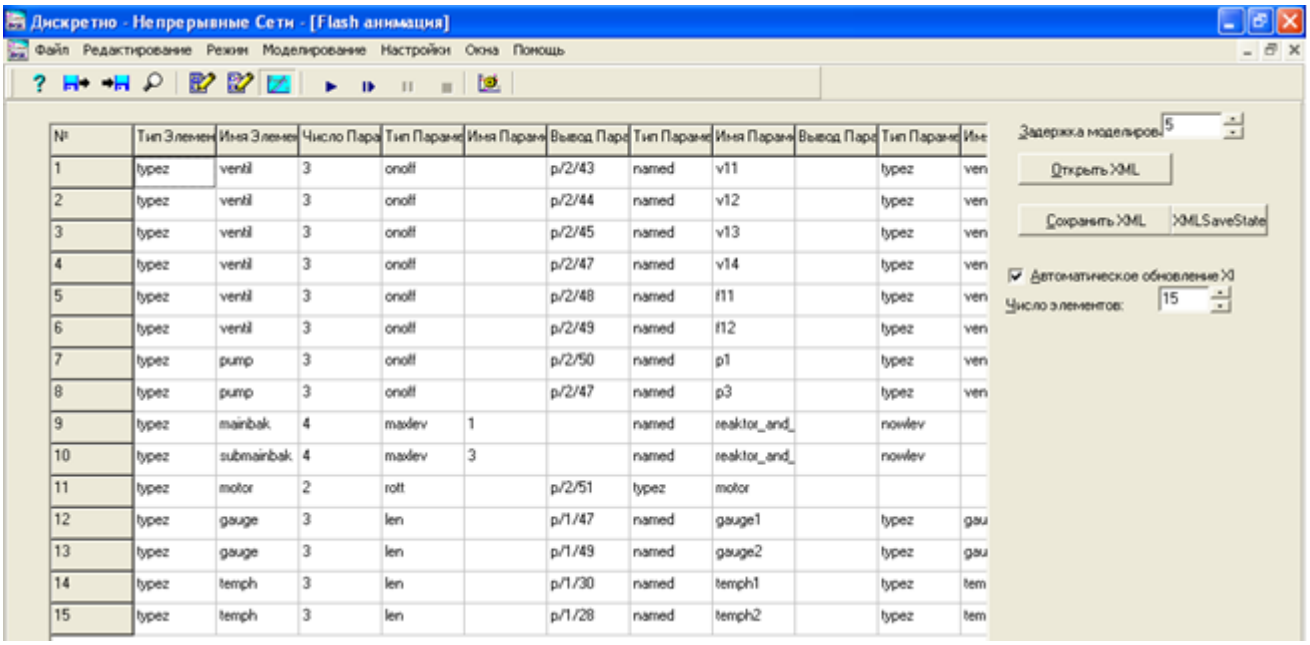
```
<presss>
    <File1 typez="ventil" onoff="true" named="v1"/>
    <File1 typez="mainbak" maxlev="90" nowlev="40"  named="bak"/>
<presss>
    Consider the child tags in more detail.
    <File1 typez="ventil" onoff="true" named="v1"/>
```

Object type ventil, which can be seen from the part of the line:"types =" ventil ".

For the current situation onoff = "true", is responsible, so we can see the open or closed valve. The name used in the flash of the v1.

The fallowing tag contains typez = "mainbak", with a maximum level of 90, as evidenced by maxlev = "90". The current level is nowlev = "40" the name in the flash part is named = "bak".

Window forming data transmission between DC-Net and Flash is shown in Fig 3. It reflects the information exchange in the formation of the state vector in the technological prosses of PVC production. TTIP element, the number of parameters, parameter type, etc are shown. Generalised actions over the variables are indicated in the right pane.



№	Тип Элемен	Имя Элемен	Число Пара	Тип Параме	Имя Параме	Вывод Пара	Тип Параме	Имя Параме	Вывод Пара	Тип Параме	Име
1	typez	ventil	3	onoff		p/2/43	named	v11		typez	ven
2	typez	ventil	3	onoff		p/2/44	named	v12		typez	ven
3	typez	ventil	3	onoff		p/2/45	named	v13		typez	ven
4	typez	ventil	3	onoff		p/2/47	named	v14		typez	ven
5	typez	ventil	3	onoff		p/2/48	named	f11		typez	ven
6	typez	ventil	3	onoff		p/2/49	named	f12		typez	ven
7	typez	pump	3	onoff		p/2/50	named	p1		typez	ven
8	typez	pump	3	onoff		p/2/47	named	p3		typez	ven
9	typez	mainbak	4	maxlev	1		named	reaktor_and_		nowlev	
10	typez	submainbak	4	maxlev	3		named	reaktor_and_		nowlev	
11	typez	motor	2	rott		p/2/51	typez	motor			
12	typez	gauge	3	len		p/1/47	named	gauge1		typez	gau
13	typez	gauge	3	len		p/1/49	named	gauge2		typez	gau
14	typez	temph	3	len		p/1/30	named	temph1		typez	tem
15	typez	temph	3	len		p/1/28	named	temph2		typez	tem

Fig. 3 – Data Windows formation between DC-Net and Flash

Conclusions

It was found that the mathematical representation of discrete-continuous processes and exactly the basis of the actual interface DCNET environment allows to reduce time and material costs for the development and study of complex technological system and to increase functional possibilities of the visualization environment compared to ActionScript.

Referenses

[1] Peterson J. Theory of Petri Nets and Modeling / J. Peterson.; per. with ang.-M.: Mir, 1984.-264c.
[2] Bangal Sh ActionScript. Basics / W Bangali; per. from English. SPb: Symbol-Plus, 2002.-480 c.

[3] Gaytan OM Vizualizatsiya rezultativ Modeling virobnichih /O.M systems. Gaitan // Visn.KrNU IM. Ostrogradskogo.- 2013-VIP. 5.-S. 78-82.
[4] A.A Gursky candidate. Sc. Science. , A. Denisenko Systems kombynyrovannoho regulation proyzvodytelnosty centrifugal compressor // Proceedings of the Odessa Polytechnic University Odessa UNP Vыp.2 (32), 2009 S. 78-83.
[5] A. Denisenko Ynformatsyonnaya TECHNOLOGY animation slozhnыh of technical complexes based on discrete neprerыvnыh networks, flash-technology and funds DCNET // Registration storage and processing of data - 2014, Volume 16, №3.-S.54-61.

Received by edition: 12.04.2016. Approved for the press: 7.06.2016

AUTOMATION NEWS

Thinking Differently About Wastewater Management

Crucial to any treatment of wastewater is monitoring the water condition, and automation has an important role to play here, says Marc Mason, business development manager at Emerson Process Management. “Remote monitoring of these parameters saves considerable labor time and costs vs. manual grab samples.”

Along with saving time and money, remote monitoring also provides better data, says Todd Langford, water solutions leader for unconventional oil and gas at GE Power. “Real-time analytical data is becoming more and more important,” he says. “For example, when a water sample is sent to a lab for analysis, that sample will change from the time it is sent out to the time it is analyzed.”

Automation can further enhance the accuracy of water analysis by keeping tabs on the sensors collecting the data, Mason adds. “The most important aspect of automation is the availability of real-time diagnostics on sensor condition. Sensors can be replaced or calibrated when needed before readings are impacted.”

As far as Easton is concerned, the best wastewater treatment solution is a central processing plant that makes maximum advantage of economies of scale and automation. The ideal system, he says, draws in the wastewater from surrounding wells to be processed in one place. There, wastewater is piped in and treated water is piped out, as in a municipal wastewater treatment plant.

Just such a system is in place at Shell Oil’s Pinedale Anticline Project Area (PAPA) in Wyoming, which reclaims more than half of all the water it uses. The facility is one of a handful of oilfields taking this new approach to wastewater treatment. At PAPA, some 400 wells send their wastewater to a central location, where it undergoes a variety of processes to render it reusable. Treatment takes two main paths: The water can either be treated for release back into the environment—at which point it exceeds drinking water standards—or it can be further treated for use in fracking another well.

http://www.automationworld.com