

DYNAMIC STUDY SUPPORT WITH CONNECTED EXTERNAL SYSTEMS

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For a long time, people have been trying to find ways that would lead to more effective teaching.

Simultaneously, study and teaching supports have been developing. Current information technology, electronics and microprocessor technology have brought completely new possibilities into creation of study supports. They also allowed a new way of study supports creation and their direct connection with external systems.

It is basically about the transition from static to dynamic creation of study supports.

Also, the possibility of direct connection of study supports with external systems enables all that was impossible up to now, such as creation of study

supports for a target group and the ability to monitor and manage students' practical activities or responses to these practical activities and modify study supports according to students' results.

This is the prerequisite for the creation of study supports with internal intelligence.

WHAT LED TO THE DESIGN CONCEPT OF DYNAMIC STUDY SUPPORTS WITH CONNECTED EXTERNAL SYSTEMS

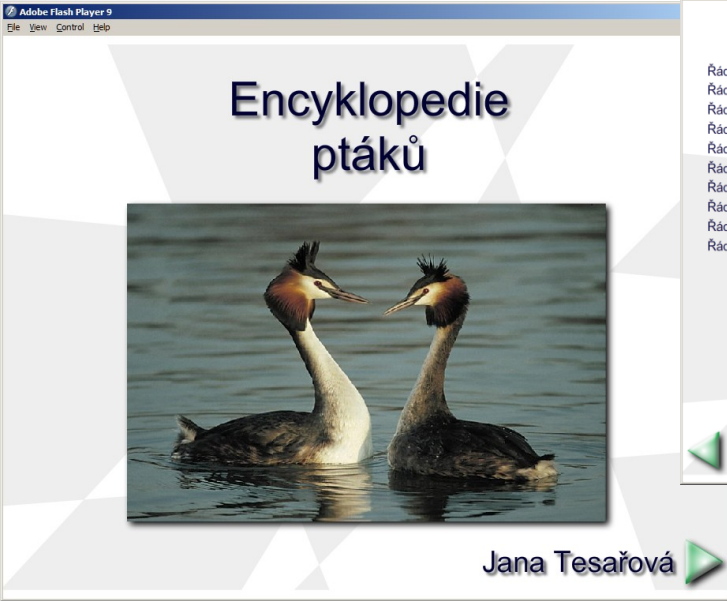
- great expansion of ICT technologies and programs for creating multimedia study supports - this allows the authors to create their own study supports directly, **In my opinion, it is extremely important to give authors/teachers maximal flexibility in their didactic approach and to allow them certain originality**
- teacher should have the opportunity to **flexibly adjust study supports to the target group as well as to current needs and his/her way of teaching**
- potřeba vedení a kontrola činností studenta při praktických činnostech prováděných v rámci samostudia

DYNAMIC STUDY SUPPORTS

- **a well-prepared study support** is the basis
- **this support is first split into its component fragments (blocks)** including the topics, problems and their explanations, explaining and motivating animations, simulations, audio, thematic tasks, examples, etc.
- it is important **for longer texts to be divided into smaller parts** to avoid scrolling the text
- **for all the blocks the printed form is needed** so that a student could print out this study support or just its part
- for the creation of a support, **a list that defines the sequence of units in the support is used** (XML file)
- **the study support itself consists of presenter that presents the support according to the list**

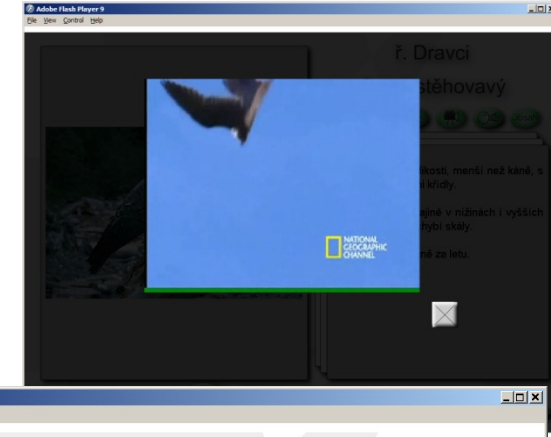
EXAMPLE OF THE STUDY SUPPORT

"ENCYCLOPEDIA OF BIRDS "



Obsah

Řád Potápky	1
Řád Brodiví	3
Řád Hrabaví	7
Řád Měkkozobí	10
Řád Vrubozobí	13
Řád Dravci	17
Řád Sovy	21
Řád Šplhavci	24
Řád Kukačky	27
Řád Pěvci	28



ř. Dravci

Sokol stěhovavý

Popis
 Dravec střední velikosti, menší než káně, s dlouhými špičatými křídly.
Prostředí
 Žije v otevřené krajině v nížinách i vyšších polohách, kde nechýbí skály.
Potrava
 Loví ptáky, převážně za letu.

19

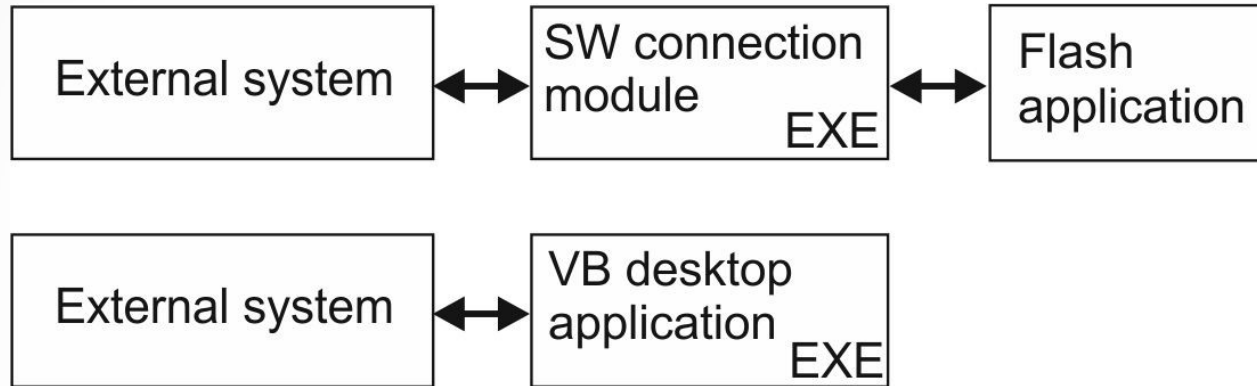
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EXTERNAL SYSTEMS DIRECTLY CONNECTED WITH STUDY SUPPORTS

- it allows the study support to control the behaviour of the external system
- it allows the study support to control the external system
- the study support can thus demonstrate the study matter on the external system, the study support can guide the student through the process of measuring and it can set up the external system and then the student performs measuring using the given values
- the mutual communication between the study support and the external system offers the possibility of controlling either the external system from the study support, or controlling the study support from the external system
- the implementation of external systems can forbid the student to continue in studying, if he hasn't completed all the activities that he was supposed to do in his study

CONNECTION OF EXTERNAL SYSTEM WITH DYNAMIC STUDY SUPPORT

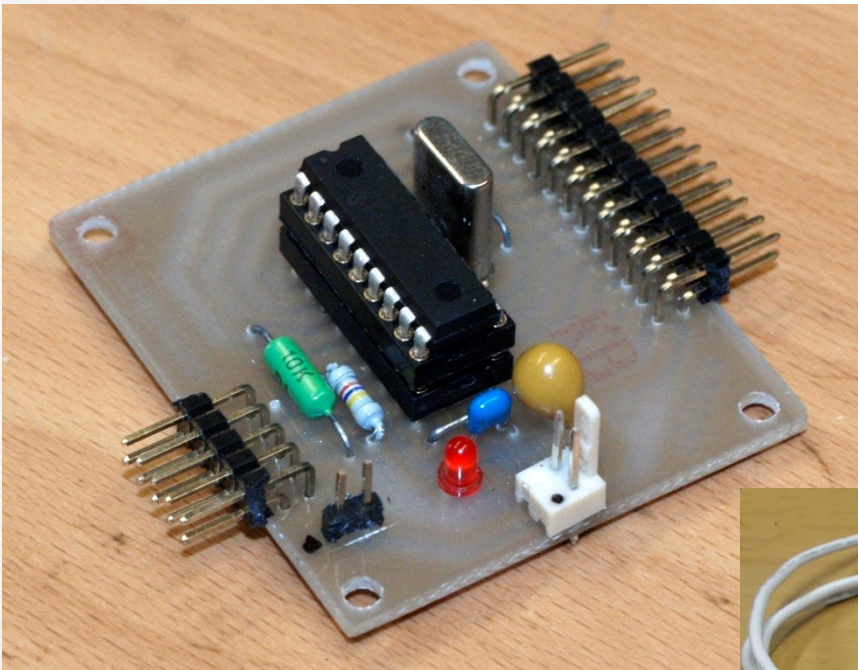


- dynamic study support made in Flash, Visual Basic, etc.
- SW connection module – made in Flash (MDM Zinc) or implemented directly to Visual Basic application



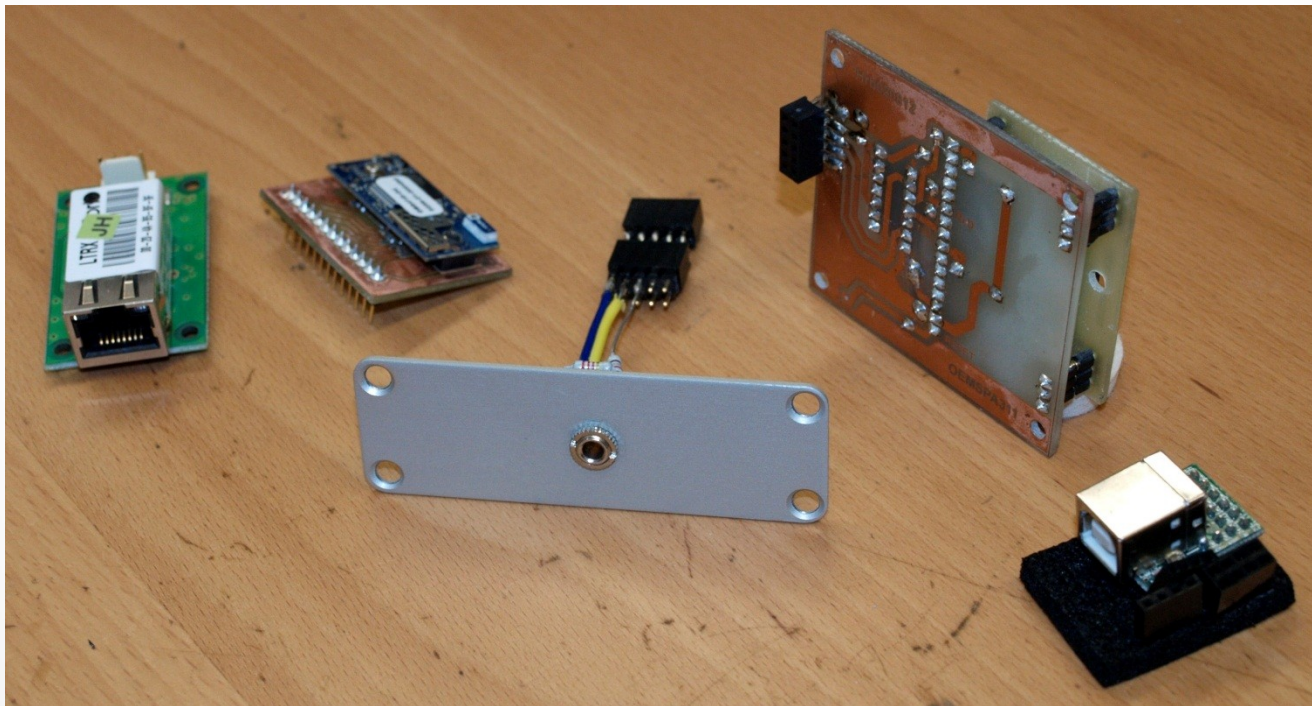
THE BASIC VERSION OF THE UNIVERSAL CONNECTION HW MODULE

- from the kit, compact version, ..



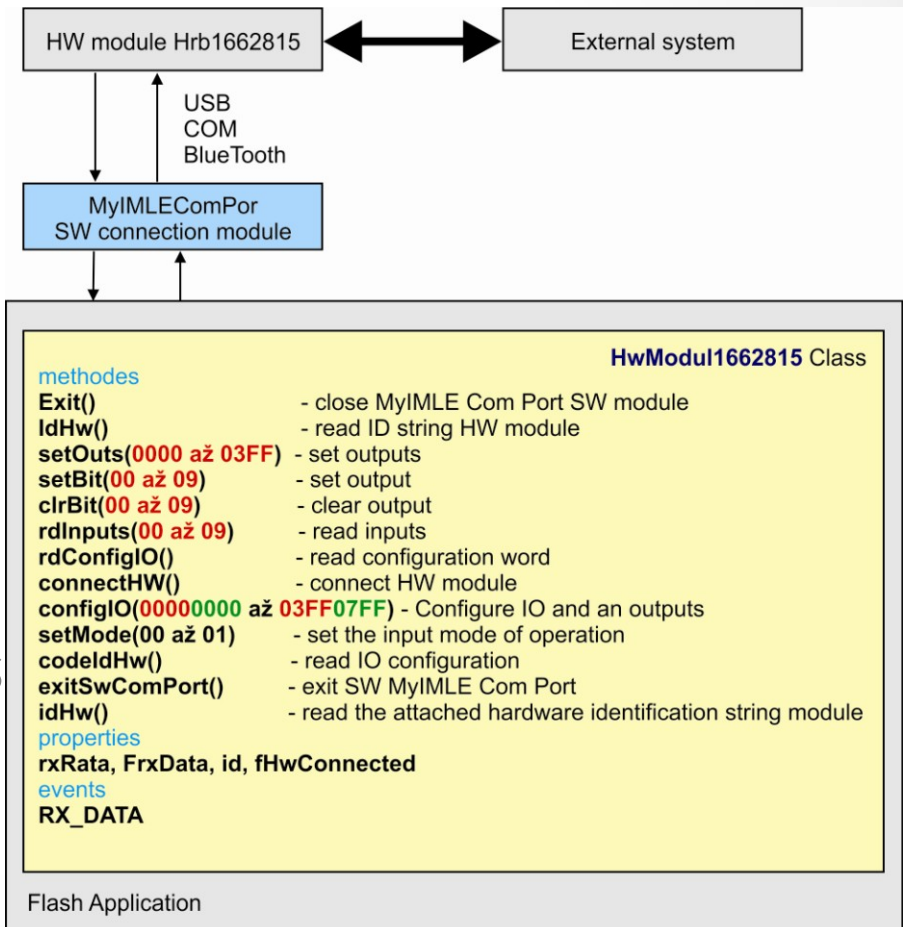
MODULES FOR CONNECTION OF EXTERNAL SYSTEMS TO PC

- for example - TCP/IP, Bluetooth, RS232 TTL or 3.3V, Bluetooth 3.3V, or USB/TTL RS232



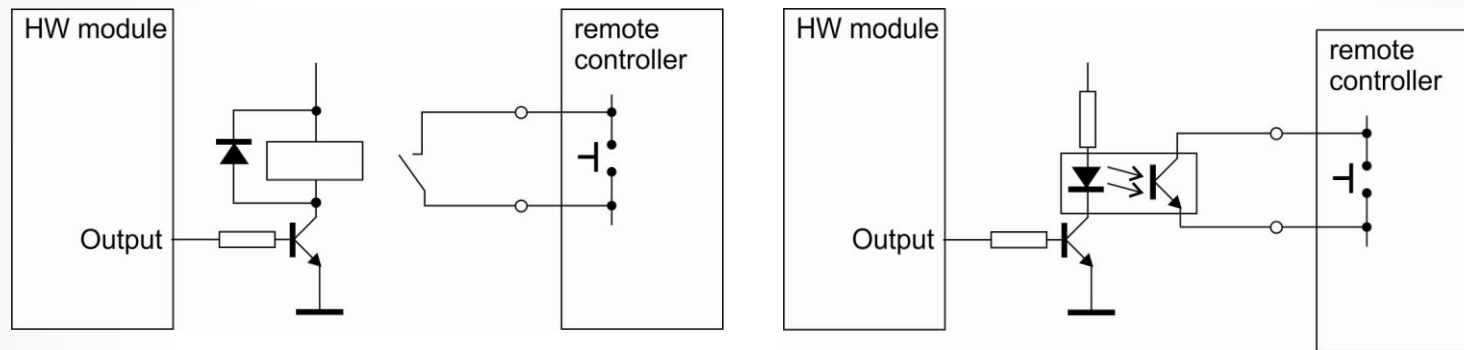
External systems connected with dynamic study supports from user's point of view

- from the information mentioned above, it may appear that **the creation and use of external systems can be very complicated and difficult** for common users, **but it is not true**

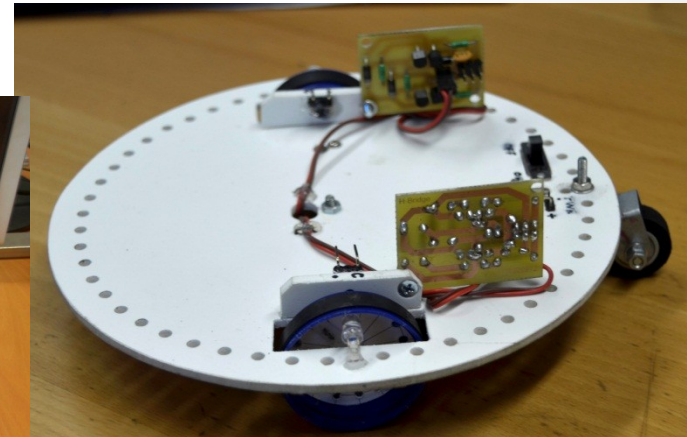
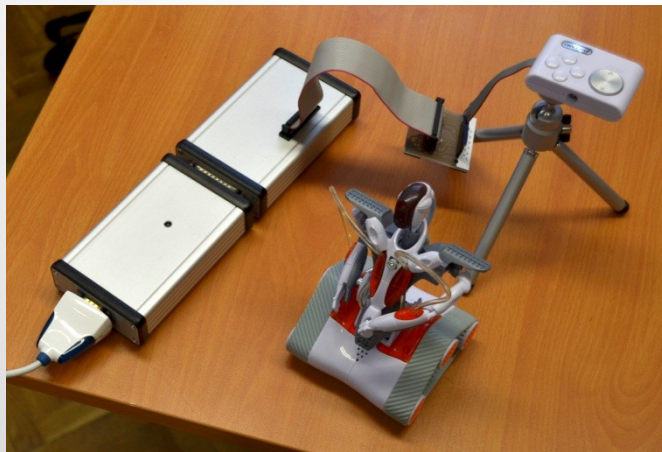


- methods of the Flash class for the simples HW module - 10 digital Inputs /Outputs and one digital input

Circuit board relay connected with the remote control of the model is connected to the output of HW module



- Example of simple applications



THANK YOU FOR YOUR ATTENTION