a) postup prací při řešení grantového projektu/ rozbor řešení grantového projektu na pracovišti řešitele a spoluřešitelů včetně zdůvodnění případného odklonu řešení projektu proti schválenému návrhu projektu, dosažené dílčí výsledky v daném kalendářním roce:

In the first year of the project, our research focused on all areas identified in the proposal. The results of this research were described in several articles and proceedings [2], [3], [4], [5], [9] (the numbers refer to the table with project outputs) and presented at thematically related conferences and workshops (EURALEX 2012; TSD 2012; Session of the Committee for Research of Grammar Structure of Slavonic Languages of the International Committee of Slavists 2012). The enriched version of the valency lexicon, VALLEX 2.6 was released, [6], http://ufal.mff.cuni.cz/vallex/2.6/). Moreover, a PhD thesis closely related to the central topics of the project (Lexikálně-sémantické konverze ve valenčním slovníku [Lexical-semantic conversions in the valency lexicon]) was finished, submitted and successfully defended by one of the team members, Václava Kettnerová [1]. In the following, a short summary of achievements in the individual research areas is provided.

The lexicographic representation of various changes in the valency structure of verbs
1.1 Theoretical research; design of a formal model for lexicographic description.
The formal model of lexicographic representation of changes in the valency structure of Czech verbs was discussed in a greater detail. We proposed a division of the lexicon into two parts and evaluated its theoretical adequacy and economy, as well as the suitability of different types of rules for different types of Czech alternations. We distinguish two types of alternations (changes in valency frames of verbs) on the basis of used linguistic means: (i) grammaticalized alternations and (ii) lexicalized alternations (also semantic diatheses). The results of this work were published esp. in [4].
The proposed model was also examined with respect to the possibility of describing changes in valency structure (namely diatheses) in Russian and Polish – we can conclude that new values (labels) for the description of grammatical diatheses in Russian and Polish are necessary, especially for different types of reflexive constructions [7].

1.2 Grammatical and syntactic diatheses: theoretical and practical aspects.
Grammatical changes in the valency structure of Czech verbs – diatheses and reciprocities – were preliminary studied and their lexicographic representation by means of formal syntactic rules was elaborated on the example of passive diathesis and reciprocity involving two actants. The adaptation of syntactic rules describing the same phenomena in PDT-VALLEX was proposed for VALLEX. The results of this work were published in [5]. We focused also on combinations of diatheses and reciprocal constructions and we addressed the issue of the necessity of ordering syntactic rules introduced in (Urešová, Valence sloves v Pražském závislostním korpusu, Praha 2011).
As for practical outputs, a tool for deriving valency frames for marked uses of verbs from unmarked uses (i.e., active use) was designed. The tool is a first part of the system for automatic identification of diatheses applicable on a given valency frame.

1.3 Semantic diatheses: theoretical and practical aspects.
The formal model of the representation of diathetic phenomena based on semantic relations between different lexical units of the same lexeme was proposed in the doctoral thesis Lexikálně-sémantické konverze ve valenčním slovníku [Lexical-semantic conversions in the valency lexicon] defended in June 2012 by V. Kettnerová [1]. In this work, two types of semantic diatheses (or lexical semantic conversions to use the term proposed by Kettnerová) were studied in detail – the locative diathesis (e.g., to load hay onto the truck – to load the truck with hay) and the swarm diathesis (e.g., bees are swarming in the garden – the garden is swarming with bees). Analysis of the swarm diathesis was published as the case study [2]. From a theoretical point of view, special attention was paid to the holistic effect of some participants in the constructions of the semantic diatheses.
Further research on semantic lexicalized alternation (lexical semantic conversions as well as other types of changes in valency structure) was conducted; a journal article summarizing these results is in preparation [8].

1.4 Other types of changes in the valency structure of verbs.
A preliminary investigation has revealed also another phenomenon closely related to changes in the valency structure of Czech verbs, namely light verb constructions (LVC, usually referred to as analytical predicates in Czech linguistics). The main goal of this subtask included within the project is (i) to examine theoretical and practical aspects of light verb usages and (ii) to propose an adequate and at the same time economical representation of these phenomena in the valency lexicon. In designing such representation, the emphasis is laid both on human and machine readability.
As a first step, corpus data are examined in order to obtain inter annotator agreement in distinguishing light usages of a verb from its main usages. We prepared data (100 sentences from the Czech National Corpus, the part SYN 2000 for each of approximately 40 chosen verbs) and a user interface for convenient one-keystroke annotation with easy input of additional information. Annotators can see a sentence with a marked verb (and optionally a context). When they decide to mark it as an LVC, they are prompted to indicate the full collocation of the verb and the noun, and

subsequently to insert the verb valency position (functor) to which the Actor of the noun refers.

1.5 Comparative aspects of diatheses.
1. Different cases of lexical-semantic conversions (lexicalized alternations) in Czech, Russian and Polish are examined, with the stress on the relation between syntactic structures and lexical units. Some verbal lexical units can be combined only with a limited group of nominal lexical units. Different types of these combinations are examined with regard to idioms, set phrases etc. (especially Czech in comparison with Polish and Russian). We compared the possibility of Czech, Polish and Russian `verbs of physical contact' to be the center of the conversion. Differences in compatibility of verbal lexical units and the lexical expressions of their complementations are demonstrated on the examples of the verbs navléci / nawlec `to thread' / prolít `to pour through'. A complicated structure of diathetic relations of some verbs is illustrated on the Czech lexeme balit `pack' in [9].
2. Moreover, a group of Russian verbs (35 verbs allowing for lexical-semantic conversions Locatum – Location, Material – Product, and Alternation with Dative Participant, respectively) were selected for detailed examination of grammaticalized alternations (diatheses – passive, deagentive, dispositional, recipient passive, and reciprocity) and their comparison with Czech. We have focused esp. on deagentive and dispositional diatheses in Russian, and the relationship between diatheses and the aspect of the verbs (in cooperation with Mgr. Marie Podobová and Mgr. Bohuslava Golčáková, PhD.).
3. Constructions with multiple structural expressions of a situational participant can be applied to some Russian verbs. A group of 130 lexical units with this property (especially counterparts of Czech lexical units with this property) were analyzed. There are some differences between Czech and Russian verbs of this group, especially in verbs with prefixes vy-, s- (вы-, с-). As a result, a group of 50 verbs were chosen for further annotation (in cooperation with Mgr. Marie Podobová).
4. A case study of several Slovenian verbs (in comparison with their Czech counterparts in VALLEX) was initiated (Grégoire Labbé in cooperation with prof. Patrice Pognan).

1.6 Application in an electronic language resource.
A necessary prerequisite for an application of acquired theoretical results is a user-friendly annotation interface allowing for annotation of multi-lingual data. Such interface was prepared – it follows the idea of the original text interface of Czech valency annotation (text editor with syntax highlighting) with additional shortcuts. We provide a template for a new verb annotation with all required fields. For a Russian verb, the field is pre-filled with the value from its counterpart in the Czech VALLEX (and unique identifiers allowing for linking corresponding lexical entries are added).

2 Mapping lexical resources: an effective way of enriching lexical information
2.1   Enhancing Czech valency lexicon with semantic classes and semantic roles.
For the purpose of enhancing the VALLEX lexicon with semantic information, we make use of FrameNet, a semantically oriented lexical resource. At the current stage, semantic frames from FrameNet have been mapped onto eight groups of verbs with various semantic and syntactic properties. The feasibility of this task has been verified by the achieved inter-annotator agreement measured on two semantically and syntactically different groups of verbs – verbs of communication and exchange (85.9% and 78.5%, respectively). Based on the upper level semantic frames from the relation of 'Inheritance' built in FrameNet, the verbs of these eight groups have been classified into more coherent semantic classes. Moreover, frame elements from these upper level semantic frames have been assigned to valency complementations of the verbs of the listed groups as semantic roles. As in case of semantic frames, the achieved inter-annotator agreement concerning assigning frame elements measured on verbs of communication and exchange has been promising (95.6% and 91.2%, respectively).
As a result, 1 270 lexical units belonging to the verbs of communication, mental action, psych verbs, social interaction, verbs of exchange, motion, transport and location (2 129 Czech verbs in total if perfective and imperfective verbs are counted separately) have been classified into syntactically and semantically coherent classes and their valency complementations have been characterized by semantic roles adopted from the FrameNet lexical database. The results of this work were published in [3].

2.2 Strengthening the lexical resource with corpus evidence.
1. VALEVAL is a corpus of sentences manually annotated using the valency lexicon VALLEX: lexical units of more than 200 verbs have been identified in 100 sentences. In other words, each occurrence of a selected verb was assigned to a particular lexical unit from the VALLEX lexicon.
As this valuable lexical resource was connected to the previous version of VALLEX, we prepared a rule-based system linking lexicon entries across lexicon versions. It works successfully, although a few cases had to be solved manually. As a result, we obtained corpus evidence (in average almost fifty for each verb) for 208 verbs. The enriched lexicon, VALLEX version 2.6, was released for research purposes ([6], see also http://ufal.mff.cuni.cz/vallex/2.6/)
2. In accordance with the project proposal, we have started interlinking lexical units of two lexicons, VALLEX and PDT-

VALLEX (valency lexicon of verbs from the Prague Dependency Treebank). The idea was to use the same rule-based system as mentioned in the previous paragraph. We focused on less complex verbs in the first phase, namely verbs consisting of less than four lexical units. Even for these verbs, it seems inevitable to rework the rules since the lexicons differ more than was expected.

b) využití technického a přístrojového vybavení pořízeného z grantových prostředků:

The costs on computer equipment renewal (new PC and other PC components) were partially covered by the grant budget in accordance with the original project proposal.

c) stručná zpráva o průběhu a výsledcích zahraničních cest:

The traveling costs related to the participation of the team members at specialized conferences and workshops were covered (sometimes partially) from the grant budget. An active participation (presentation of the results achieved within the project) was required.
- EURALEX, Oslo, August 7-11, 2012 (Lopatková, Kettnerová); paper presentation [4] and scientific cooperation
- Session of the Committee for Research of Grammar Structure of Slavonic Languages of the International Commitee of Slavists October 16-18, 2012, Nitra (Skwarska); the participation on working session of the Committee, paper presentation [7]
- TSD, Brno, September 3-7, 2012 (Kettnerová); paper presentation [5]

In addition, two study stays were (partially) supported:
- Summer school "Quantitative Methods and Corpora in Linguistic Research", University of Pavia, Pavia, September 10-21, 2012 (Vernerová); her newly gained knowledge of the methods of distributional analysis will be applied in tasks 2.1 and 2.2 (mapping of lexical resources, extraction of semantic information, and the automatic detection of relevant corpus examples).
- the study stay in Warsaw, November 9-18 (Skwarska); an examination of scientific books and papers that are not accessible in the Czech Republic, especially on syntactic properties of Polish verbs and their lexicographic description

d) plán práce na další rok řešení:

In the second year of the project, we plan to continue our research in all areas identified in the proposal. A more concrete description of the main tasks is specified below. We will focus on both theoretical and practical aspects as well as on an implementation of the achieved results to the VALLEX data. An important part of the working capacity will be used for publishing results at specialized conferences and in journals.

The lexicographic representation of various changes in valency structure of verbs
1.1 Theoretical research; design of a formal model for lexicographic description. The formal model of lexicographic representation of changes in valency structure of Czech verbs will be further discussed with respect to new types of alternations (splitting of a situational participant, multiple realization of a situational participant). Moreover, based on the data from the LVC annotation (see above), we plan to extend both the data and the rule component of the lexicon to be able to capture also these types of changes in the valency structure of Czech verbs.
Further enrichment of the formal model of the VALLEX lexicon is foreseen in connection with comparative studies.

1.2 Grammatical and syntactic diatheses: theoretical and practical aspects. We will focus on open theoretical issues identified during the previous research, namely (i) on combination of diatheses and reciprocities and (ii) on reciprocities involving more than two valency complementations.
Following the results achieved in the first year of the project, a system for automatic identification of diatheses that are possible for a given valency frame will be implemented. The adaptation of formal syntactic rules and the identification of relevant lexical items for individual diatheses will be of a great interest since the original rules (which were designed for PDT consistency checking) 'over-generated' (in a sense they allowed also wrong surface configurations, relying on the fact that the underlying text analyzed in the corpus was grammatically correct). We suppose that this shortcoming will be eliminated by imposing strict conditions on the application of the rules.

1.3 Semantic diatheses: theoretical and practical aspects. As for semantic diatheses (i.e., lexicalized alternations), the proposed formal model will be further studied and enriched. The stress will be laid on non-conversive alternations, namely so called splitting of a situational participant and a multiple expression of a situational participant. We plan to finalize and submit a journal article summarizing achieved theoretical as well as practical aspects of these alternations.

1.4 Other types of changes in valency structure of verbs. We will continue also in pilot studies of other types of changes in valency structure of verbs, especially in studying LVC and further analyzing the data obtained from the annotations.

1.5 Comparative aspects of diatheses. The theoretical comparative research of grammatical diatheses (Czech-Russian-Polish) will continue, especially the research of reflexive constructions. Our goal is to define labels (markers) of grammatical diatheses acceptable for Russian and Polish.
The theoretical comparative research of other changes in valency structure is also presupposed: multiple structural expression of a situational participant and structural splitting of a situational participant will be studied. Further, the annotation of attributes of Russian verbs will continue. The annotation of attributes of Polish verbs will begin, esp. in cooperation with external Polish native speakers.

1.6 Application in an electronic language resource. The achieved results will be projected into the VALLEX lexicon – a release of a new version of the lexicon is foreseen.

2 Mapping lexical resources: an effective way of enriching lexical information
2.1 Enhancing Czech valency lexicon with semantic classes and semantic roles. For the purpose of enhancing the VALLEX lexicon with semantic information, we intend to experiment with other groups of verbs and to increase the coverage of semantic information following the progress made in FrameNet. Moreover, we will start the work on adding the extracted semantic information to the HTML version of the lexicon and thus make it available for users (more-or-less technical issues are expected such as enriching the data type (XML-based format), merging the data and making them accessible through an HTML browser).

2.2 Strengthening the Lexical Resource with Corpus Evidence. We will also continue in the effort of interlinking different valency lexicons, primarily VALLEX and PDT-VALLEX (as mentioned above, rule-based approach is supposed, with the stress on less complex verbs, and the first experiments with complex verbs in the later part of the year). Further, we plan to start with interlinking VALLEX and Eng-Vallex (Šindlerová, 2010). As both of these lexicons are linked to sentences from corpora (PDT and PEDT, respectively), the interlinking will provide corpus evidence for VALLEX data as well.