

TABLE 1. HIGHLIGHTS OF LANGUAGE RESOURCE CENTER PROGRAMS, PROJECTS, MATERIALS 2005

Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
CALPER (Penn State) Advanced	-- Survey on "Assessment Practices of Teachers of Advanced Language Learners" -- Discourse-pragmatic features of Chinese and Korean; -- Language Learning and Study Abroad -- L2 Pragmatics in Computer-mediated Intercultural Interactions	-- On-line materials for Advanced Chinese and Advanced Japanese; -- Workbook on Discourse-pragmatic features of Advanced Korean; -- Workbook on Narrative Skill Development of Advanced Russian	--Teacher Handbook on "Dynamic Assessment" Techniques --Web space on "Classroom Second Language Assessment"	-- On-line Tutorial on "Using Corpora in Language Teaching and Learning"; -- Extensive web spaces on "Project Work and Project-based Learning" and "Technologies for Advanced Language Proficiency"	--Listening materials for advanced Japanese; -- Corpus resources for Chinese	-- Web resources on Project Work and Technologies	- Summer workshops for language educators; - Onsite workshops for teachers throughout the year as requested;	- Monthly e-newsletter with 4,200 subscribers; -Working Papers, Professional Development Documents, Digests, and Resource Guides (all as free downloads); - Presentations and exhibitions at conferences
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
CARLA (Minnesota Comprehensive)	*Interaction in language immersion classrooms *Learning strategy use and learner strategy training *Study abroad language and culture learning strategy use *Interlanguage	*Proficiency Oriented Language Instruction and Assessment curriculum *Maximizing Study Abroad guidebook series *Articulated K-12 curriculum frameworks for Japanese and Russian *Styles-and Strategies-Based Instruction Teachers' Guide *Online materials for	*Minnesota Language Proficiency Assessments in French, German, and Spanish *Annual week-long summer institute on developing proficiency assessments	*Int'l Language Teacher Educators Conference (held in 99, 01, 03, 05) *Annual Summer Institutes for Language Teachers (see below) *Content-based	*Databases of where LCTLs are taught in N. America (all languages/levels) *Book and CD ROM on LCTL material development--all languages /levels	*Many materials (print and on-line) and professional development opportunities targeted at K-12, particularly middle/secondary levels *Immersion education	Each year CARLA offers 10-12 intensive week-long summer institutes for language teachers on assessment, study abroad, content-based	*Yearly print newsletter and summer institute brochure to 25,000 FL teachers *Quarterly e-newsletter with 12,000 direct subscribers

	pragmatics	Arabic, Basque, Chinese, Hindi, Irish, Hebrew, Japanese, Korean, Norwegian, Polish, Portuguese, Thai	*Virtual Assessment Center and Virtual Item Bank for classroom tests	Language Teaching with Technology face-to-face program and on-line learning and resource center for language teachers *Virtual Assessment Center: on-line learning and resource center for language teachers	*On-line modules for learning speech acts in Japanese and Spanish *Articulated K-12 curriculum frameworks for Japanese and Russian	project, targeted K-12, particularly at early elementary	instruction, strategies-based instruction, technology-based teaching, SLA, immersion, LCTL material development. Program has served over 2,000 language teachers	*Website with extensive resources *Summer institutes for over 2,000 teachers (see above)
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
CASLS (Oregon) Comprehensive	*Diverse learner's initiative: a longitudinal research project that aims to measure student proficiency and attitudes and motivations related to various program models *Articulation through standards *SLA web: an online database for SLA researchers and educators	*Proficiency, Efficiency, Planning Tool: an online curricular tool for Spanish and Japanese (Chinese under development) *Dynamic Activity Templates: teaching materials for Spanish and Japanese (Chinese under development) *Mosaic: content-based thematic units connecting languages with other disciplines in Spanish and Japanese (French under development) *ClassPak: a suite of proficiency-based assessments and materials	*Standards-based measure of proficiency: online proficiency assessment in Spanish, Japanese, French, German, Chinese, Hebrew, Turkish (Italian, Hindi, Swahili, Yoruba under devel.) *PLACE: online placement test in Spanish, Japanese, French, German	*Western Initiative for Language Leadership (WILL): a two-year professional development program that supports novice rural second language teachers (2003, 2005) *Data-driven professional development	*Standards-based Measurement of Proficiency in Japanese, Chinese, Hebrew, and Turkish (Hindi, Swahili, and Yoruba under development; appropriate grade 7 or above)	Articulation through standards	WILL Summer Institute: a week-long institute for participants of the WILL program (2003, 2004, 2005)	*InterCom: a weekly email service (563 subscribers) *STAMP: 5 states, 17 districts, and 6 private schools use STAMP *ClassPak: 3 states, and 14 districts use ClassPak *PLACE: 15 postsecondary institutions use PLACE for program evaluation or

		in Spanish, Japanese, French, and German	*ClassPak: proficiency-based assessments and materials					as a placement exam
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
CLEAR (MSU) Comprehensive	<ul style="list-style-type: none"> *Interactive feedback to heritage and non-heritage learners *Dissemination of innovative tools into FL classrooms *Task-based interactions in classroom and laboratory settings *Paying attention to input 	<ul style="list-style-type: none"> *Language Learning Materials for Russian: A Content-Based Course Pack *Instructional Guides for Use in Small Classes: African languages, Hindi, Thai, Vietnamese *Internet Sourcebooks: Japanese, Korean, French, German, Spanish *Authentic Hausa *Materials & Activities *Facilitating Business Connections: A Guide for Foreign Language Educators 	<ul style="list-style-type: none"> *Modules for Interactive Multimedia Education and Assessment (MIMEA) - *Online assessment of LCTL language and cultural knowledge in Arabic, Chinese, Korean, Vietnamese, German *Web-based placement tests: French, German, Spanish *Modules for Assessing Socio-Cultural Competence: Russian and German 	<ul style="list-style-type: none"> *Annual summer workshops (see “Institutes”) *Onsite workshops around the country – addressing needs of specific teacher populations *Professional development for heritage language teachers 	Materials for Chinese, Korean, Japanese, Vietnamese, Arabic, Hausa, Hindi, Russian at multiple levels	<ul style="list-style-type: none"> *World Languages Day conference for high school students and teachers *Business packets for high school classrooms: German, French, Spanish Summer and onsite workshops targeted mainly for K-12 teachers 	<ul style="list-style-type: none"> *Summer professional development workshops (3-5 days, several offered each summer). Recent topics include: online language materials, assessment, authentic materials, motivation, reading, speaking, writing, etc. 	<ul style="list-style-type: none"> *CLEAR News newsletter (2 issues/year; sent to 16,000 people) *Website with extensive resources and materials *Summer workshops (see “Institutes”) *Hosting common LRC website with listings of all LRCs, all summer workshops and institutes available, etc. *Online journal: <i>Language Learning & Technology</i>

Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
CELCAR (Indiana) Central Asia	*New methods of teaching LCTLs *New methods of teaching distance education language courses *Assessing US strategic needs for Central Asian languages	*Elementary textbooks with CDs for Central Asian languages *Student grammars and workbooks *Web-based reading, listening, writing modules for Central Asian languages *Web-based dictionaries of Central Asian languages	Developing proficiency guidelines for Central Asian languages	*Summer Workshops for instructors of Central Asian languages *Web-based in-service training for instructors of Central Asian languages	*Pashto: elementary - materials and instruction *Tajik: (same) *Uyghur: (Same) *Uzbek: - (Same) *Kazakh, Kyrgyz, Azeri: intermediate web-based material		Teach Pashto, Tajik, Uyghur, and Uzbek at the annual Summer Workshop of Slavic, East European and Central Asian Languages at Indiana University	All Materials are available on-line and are free to students and instructors of Central Asian languages in the US
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
LARC (San Diego) Comprehensive	*Heritage language learning strategies and diagnostic profiles *hallmarks of professional language proficiency *analysis of Arabic and Spanish speech at varying levels of	*Digital media archive; authoring system (LARCstar) for oral language testing; instructional materials for after school language programs (K-12)	*CAST (computer-assisted speech tool) for ACTFL-based , internet available assessments of oral language proficiency in Arabic (MSA, Egyptian, and Iraqi dialects), Mandarin Chinese, Persian, and Spanish ; Diagnostic Assessment tool to accompany the CAST test	In-service training for teachers, program development for certificates and credentials for world language teachers in elementary and secondary settings, teacher training for teaching to the professional levels of proficiency	Materials for Arabic,(MSA), Egyptian, Iraqi, Persian, Japanese, Chinese, Spanish, Swahili, Turkish, Urdu, Filipino, French, German, Vietnamese, Portuguese, Italian, and Korean	*Materials, both in print and on-line, to be used in after school programs and in-school settings; *Community-based language and culture events and community-driven advocacy meetings and symposia for teachers in heritage programs in Southern California	*Teach professional levels in intensive formats for Arabic, Persian, Filipino, and Spanish through summer programs; *Sponsor study abroad opportunities for teachers and learners of these languages	*Publication of joint Title VI newsletter once yearly, in print and online to CIBER, CLAS, and LARC distribution lists; *Publication of Digital Stream publications and research reports through LARC Press

Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
NALRC (Wisc) African	*Research Support for Amharic, Zulu, Setswana, Shona, Sesotho, Twi, Wolof, Somali, Hausa, and Kikongo *Annual Publication of JALTA *Annual Publication of JNCOLCTL	*Communicatively Oriented Textbook for Elementary Amharic, Zulu, Setswana, Shona, Sesotho, Twi, Wolof, Somali, Hausa, and Kikongo *Learners' Reference Grammar for Zulu, Shona, and Yoruba *CD-ROMs for Elementary Egyptian Arabic, and Amharic *ULIMI – Annual NALRC Bulletin *Brochures for Kinyarwanda, Luganda, Somali, Bemba, Kikongo, Kpelle, and Oromo	*Annual Standards-Based Measurement of Proficiency Training *Standards / Curriculum Development and Evaluation Guidelines *On-line Performance Assessment Project *Guidelines for Evaluating tutorials	*Annual ALTA Workshop *Summer Institute *Standards-Based Measure of Proficiency - for Yoruba, Swahili, and Zulu *African Language Standards / Curriculum Workshop - Yoruba, Swahili, and Zulu *Proficiency guidelines Workshop - Yoruba, Swahili, and Zulu *Annual Material Development Camp - Swahili, Wolof, Somali, Twi, Hausa and Kikongo	*African Language Enrollment Trends Project *Annual Program and Material Needs Assessment *Program Inventory List Update *African Language Human Resource and Mentor List *Clearing-House for Out-of-Print African Language Materials *On-Line African Language Map	*Summer Workshop on Level 1 Speaking, Listening, & Writing for Swahili and Yoruba *Summer Workshop on Level 1 K-12 Material Development for Swahili and Yoruba *K-12 Swahili and Yoruba Textbooks	*Annual ALTA Spring Workshop *Summer Institute for African Language Instructors / TAs	ULIMI – Annual NALRC Bulletin *Quarterly e-newsletter with 500 direct subscribers *Website with extensive resources *Summer institutes for African language teachers *Distribution of African languages Brochures *Distribution of African languages materials to Area studies and interested individuals
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
NCLRC (GU, GWU, CAL)	*Learning strategies of immersion elementary	*Russian Webcasts – on-line *Russian for Russians (heritage learners) – on-	*Development of semi-direct oral proficiency tests in Arabic and	*Essentials- on line complete guide to FL teaching.	*Arabic MSA – K12 *Syrian – University	*All materials and projects are used by K-12 except Arabic	*12 – 18 1-2 day summer institutes/year *3-week MSA	*monthly e-newsletter, The Language Resource –

Comprehensive	students. *learning strategies of students of LCTLs *Continuing survey of Arabic in K-12.	line *MSA-Iraqi: curriculum and materials *MSA-Syrian: curriculum and materials. *Learning strategies lists, descriptions, lessons and materials in 8 languages – on-line. *Extensive compilation of articles, lessons, materials developed for newsletter and e-magazine, disseminated to subscribers and available on website. * Collaborated on development of Standards for Arabic K-16.	Japanese *Development of rater training materials for semi-direct oral proficiency tests in Arabic, Chinese, Japanese and Russian * Workshops for classroom teachers in assessment	* 3 On-line teacher resource guides on learning strategies.. *On-line teacher guide to portfolio assessment. * <i>Doing Foreign Language:</i> activities for the FL classroom. * 25 -35 presentations at national conferences a year.	/adult *Iraqi – University /adult *Survey of Arabic K-12 (K-12) *Russian webcasts – 9-16/adult *Russian Heritage – 12-16/adult	conversion and Russian for Heritage learners. *Conference with state and local K-12 educational administrators.	– Iraqi *Spanish and French 3-day immersion institutes for teachers in D.C.	12,000 direct subscriptions; *e-magazine for FL teachers Culture Club- 6 issues /year. *Web-page with extensive resources.
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
NEALRC (Ohio State) East Asian	*“Pathways to Advanced Skills” series: including developments in Chinese and Japanese language pedagogy, language learning in the context of culture, nature of East Asian writing, Arabic language pedagogy, pedagogy of African languages. *Research on	* <i>Chinese: communicating in culture</i> , online materials and audio program * <i>Tell It Like It Is</i> , with video program * <i>Japanese: the spoken language</i> , interactive CD-ROM disks that focus on intermediate and advanced skills in spoken and written Japanese * <i>At Home in Japan</i> : an online self-study tutorial program * <i>Pathway to Korean</i> :	*Chinese Computerized Adaptive Listening Comprehension Test *On-line delivery of computer adaptive listening and reading tests * Advanced Language Performance Portfolio System	* Videotapes and CD-ROM disks on beginning, intermediate, and advance instruction in East Asian languages * SPEAC 7-week Teacher Training Institute for East Asian languages *Professional Standards for K-12 Chinese	*Individualized Instruction in East Asian languages *Distance learning: on-line resources for managing keeping records for on-line courses *On-line catalog of study abroad opportunities for students of	*sponsor of the Chinese Language Association of Secondary-Elementary Schools *develop professional standards for K-12 Chinese language teachers *Development of technologically connected K-12	* a seven week intensive summer institute for teachers of East Asian languages * ten-week summer immersion program for Chinese and Japanese *summer immersion program for	*Foreign Language Publications & Service published and distributed 7,000 copies of books and materials, including two academic journals to 454 different institutions in all 50 states, Washington

	Advanced Chinese skills * Technical support for advanced training in East Asian languages	<i>beginning spoken Korean from zero</i> , online materials and audio program	(ALPPS)	Language teachers *MA and Ph.D. programs in East Asian language pedagogy	East Asian languages *Master's program in Chinese language and culture	Chinese language programs	Chinese in Qingdao, China	DC, U.S. Armed Forces, and 21 foreign countries. *AAS and ACTFL conferences *SPEAC
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
NFLRC (Hawaii) Comprehensive	*Corpus linguistics for language teaching *Issues in placement *Conversation analysis as an approach to SLA *Distance education, distributed learning, and introductory language instruction	*Teaching materials developed and disseminated to date for Chinese (7 titles, some in multiple formats), Filipino [Tagalog] (6), Hawaiian (3), Indonesian (4), Japanese (10), Khmer [Cambodian] (3), Korean (8), Manchu (1), Russian (2), Pingelapese (1), Samoan (2), and Vietnamese (3) *Curriculum guides for Chinese, Japanese, Korean, Samoan, Filipino	*Workshops and publications on placement testing, proficiency assessment, online and interactive testing, and the assessment of L2 pragmatics *Elicited imitation as an oral proficiency measure (Vietnamese, Indonesian) *Training of oral proficiency testers for critical languages, in partnership with ACTFL	*Annual summer institutes *Teacher training for study-abroad programs Cambodia, Indonesia, Philippines, Vietnam *Tim Murphey video series: strategies for FL teachers *Teacher conferences hosted or co-sponsored: HALT (annually since 1991), SLRF (1998), PacSLRF (2001), Cultural Diversity & Lang. Ed (2004), CALICO (2006)	*Integrated online course sequences (intermediate to advanced) Chinese, Japanese, Korean *Stand-alone online and multimedia courses and modules for Filipino, Ilokano, Indonesian, Khmer, Thai *Support for University of Hawaii language documentation project (co-sponsored by three NRCs)	*Japanese K-12 curriculum guide Immersion summer institutes and workshops *Online language cafés for heritage language students (high school) *Foreign language partnerships linking high school and university programs (Ilokano, Samoan)	Recent themes: * Issues in placement, *Online course development for Southeast Asian languages, *Pragmatics in the Chinese, Japanese and Korean classroom, *Conversation analysis, *Corpus linguistics for Korean language learning and teaching	* <i>Language Learning & Technology</i> (online journal co-sponsored by CLEAR) * <i>Reading in a Foreign Language</i> (online journal) *26 books and monographs *52 sets of FL materials distributed as texts, tapes, videos, CDs, CD-ROMs, DVDs and downloadable documents *Presentations and exhibits at major language conferences

Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
Nat K-12 LRC (Iowa Ste) K-12	*Longitudinal evaluation research of elementary school foreign language programs; *Surveys of status of foreign language teaching: northeast region survey, New Visions in Action national survey, elementary language program status survey, Iowa international business survey	Publications include: *Language Learning: A Worldwide Perspective; *Language by Video: An Overview of Foreign Langue Instructional Videos for Children; *New Visions in Action National Assessment Summit Papers; *Instructional Thematic units for K-12 French (3) and Spanish (6) classrooms; *Guide to using the National Student Standards *Administrator's Manual and Test Administration Kit for SOPA and ELLOPA.	* New Visions in Action National Assessment Summit; *Feasibility Study: Online Listening and Reading FL Assessment for Children; * FL Interpretive Listening and Reading Assessment, Grade 4; *Enhanced Online Directory of K-12 FL Assessments and Resources.	*Annual summer institutes for teachers (see institutes); *Annual state workshops for teachers; *Host summer meeting of National Network for Early Language Learning (NNELL).	*Grade K-8 teacher development for Arabic, Japanese, and Hebrew	All work is K-12, see: Research; Materials development; Assessment; Teacher Development; Major LCTL Initiatives; Institutes; Dissemination	*National summer professional development institutes for K-12 teachers and teacher educators (8-10 days, 2-3/ summer); Recent topics: technology, action research, leadership, teacher preparation; teaching strategies	*Alumni Connections electronic newsletter (6 issues/year); *Websites: K-12 NFLRC; New Visions; host website for NNELL; *Presentations and exhibits at national and state conferences
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
NMELRC (BYU) Middle Eastern	* <i>Middle East Language Learning and Teaching in American Higher Education</i> : systematic nationwide evaluation of the learning and teaching of ME languages * <i>Novice to</i>	* <i>Arabic</i> : on-line exercises in MSA and Egyptian (includes listening comprehension exercises based on video shot in Cairo); <i>Arabic 101 & Arabic 102</i> full two semesters of a Master teacher at work on DVD. On-line Arabic student handbook * <i>Hebrew</i> : on-line student	*Standards-based measurement of proficiency: online reading proficiency assessment in Hebrew, developed in cooperation with CASLS	*Collection of Best Practice footage is well underway and is currently being made available online; *Turkish instructor workshops on testing and reading.	* <i>Arabic without Walls</i> , hybrid first-year Arabic distance learning course, co-developed with University of California System, to	*Middle East Perspectives, a secondary school social studies course which contains significant Arabic and Hebrew language components. *Efforts are	*Annual week-long summer Arabic and Hebrew pedagogy seminars	* <i>Sevgili Murat</i> - distributed to over 80% of US institutions teaching Turkish. *Training seminars and webcasts are reaching a significant proportion of

	<i>Advanced in 12 Months:</i> documentation and evaluation of accelerated Arabic learning project	handbook * <i>Persian:</i> on-line student handbook. * <i>Turkish:</i> <u>Sevgili Murat</u> DVD set (feature length movie to augment 1 st and 2 nd year Turkish		*On-line professional development webcasts and resources	feed into summer and then abroad intensive programs. *Curriculum development plan to modernize the teaching of Persian.	currently underway to adapt <i>Arabic without Walls</i> to the high school context. *Major online materials development project for Hebrew K-12 now underway.		teachers *Students at smaller programs will now have access to opportunities once restricted to students from major research universities
Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
SEELRC (Duke) Slavic and East European	*implementation of new materials and technologies for language acquisition at the advanced and superior proficiency levels *cooperation with U.S. Dept of Defense in developing new immersion programs in country. *comparative proficiency methods and testing research (K-12, universities and ACLP)	Unique web-based materials for advanced levels (seelrc.org): *web grammars for 20 LCTLs of the region, *grammatical dictionaries for Russian and Czech (Macedonian, Georgian and Serbian targeted for next period), *interactive exercises with diagnostics for Russian, Romanian, Polish, and Georgian, *webliography of Slavic, East European and Eurasian languages, *CD-ROM materials with diagnostics for Russian language and culture through film, *GLOSSOS √ on-line journal of SEELRC.	*Works with major proficiency testing tools, including ACTFL, TRKI, DLPT5, FSI OPI. *New comparative empirical analysis of test results in Russian with ACTFL, ILR and TRKI. *Development of assessment tools for LCTLs where no existing measurements currently exist.	SEELRC annual Summer Institute in Slavic and East European Languages for k-12 and university faculty: training in applied linguistics, technologies and techniques in Slavic and East European languages. All materials available on line at no cost	*Network of web-based grammars for Slavic and East European languages; *grammatical dictionaries (including full sound) of all paradigmatic forms, verbal government and aspectual information; *interactive advanced-level materials and exercises in language and culture; *webliography	*2006 Summer institute targets exclusively K-12 teachers; *web-based materials available to national community; *SEELRC works closely the Duke-Durham neighborhood partnership and the Talent Identification Program (TIP), as well as hosting teachers from across the US at summer institutes.	SEELRC annual Summer Institute in Slavic and East European Languages: Acquisition, Techniques, Technologies. Over 105 alumni teach 12 different languages in 56 K-12 and institutions, including universities, DOD and State * TRKI Russ. proficiency testing institute	*Website (seelrc.org) includes grammars, dictionaries, interactive materials with diagnostics, webliographies , post-doctoral fellowship program, GLOSSOS (web journal), summer institutes, teacher training in TRKI proficiency testing.

Center	Research	Materials	Assessment	Teacher Development	Major LCTL Initiatives	K-12	Institutes	Dissemination
SALRC (U of Chicago) South Asian	Developed web-based access (and documentation) to multiple Unicode fonts for 23 languages making both mats. dev. and browser viewing of mats. easy and universal (see Dissemination)	*Annual competition for web-based mats. dev. *Language specific wkshps to jump-start materials projects. *Planning grants for mats. developers. *Projects compltd in Hindi, Pashto, Sindhi, Tamil, Tibetan; Projs. in progress in Hindi, Urdu, Punjabi, Tibetan, Nepali, Marathi, Bengla.	Competency test development started in Hindi	*Summer institute(see Institutes). *Technical instr. for grantees (software skills; digital a/v)	*Major dollar support for and participation in summer language institute in 10 languages (Hindi, Urdu, Tibetan, Nepali, Marathi, Gujarati, Tamil, Malayalam, Sanskrit, Bangla; elementary and intermediate levels)	None	*Institute for summer lang. faculty + teach assts (pedagogy & technology); *Wkshp on The Use of Technology in the South Asian Language Classroom	*Website unique visitors rose 837% from 9/04 to 9/05 (primarily due to the development of the font site). *Web sites devlpd for all past and present workshops with full content and references. Website (only) utilized for materials competitions