संख्या

No.11(1)/2022-HCC(TDIL)-Part(10)

दिनांक

Date 02.03.2022

ADMINISTRATIVE APPROVAL

Subject : Administrative Approval for implementation of the Sub Project 'Discourse Integrated Dravidian Language to Dravidian Language Machine Translation (DL-DiscoMT)' under the Project titled 'National Language Translation Mission (NLTM) : BHASHINI'.

Implementing Agency: AU-KBC Research Centre, MIT Campus of Anna University, Cheenai as Consortium Leader and IIIT Hyderabad, Central University of Hyderabad, ICFOSS Trivandrum, MIT Manipal, C-DAC Noida, DAIICT Gandhinagar

The undersigned is directed to refer to this Ministry's letter of No.11(14)/2018-HCC(TDIL) dated 13.10.2021 conveying the Administrative Approval for the implementation of the Project titled 'National Language Translation Mission (NLTM) : BHASHINI' by Digital India Corporation (DIC), C-DAC, R&D Institutions for research through call for proposals and Other Implementing Agencies (To be identified) with the total outlay of the project of Rs. 495.51 Crore (Rupees four hundred ninety-five crore fifty one lakh only) as Grants-in-aid from Ministry of Electronics and Information Technology (MeitY). The duration of the projects is 36 months. The start of the Mission will be the date of the first release of Grant-in-aid. However, disbursement may go beyond duration of the Mission.

2.   Now, the undersigned is directed to convey the Administrative Approval for the implementation of the sub-project namely 'Discourse Integrated Dravidian Language to Dravidian Language Machine Translation (DL-DiscoMT)' under the Project titled 'National Language Translation Mission (NLTM) : BHASHINI' to be implemented by AU-KBC Research Centre, MIT Campus of Anna University, Cheenai as Consortium Leader and IIIT Hyderabad, Central University of Hyderabad, ICFOSS Trivandrum, MIT Manipal, C-DAC Noida, DAIICT Gandhinagar as consorsium members at the total outlay of the project is Rs.11,79,32,000/- (Rupees eleven crore seventy-nine lakh thirty-two thousand only) as Grants-in-aid from Ministry of Electronics and Information Technology (MeitY) for a period of 03 years. The details of the project are at Annexure– I.

3.   The standard terms and conditions governing the Grants-in-aid are enclosed at Annexure II.

4.   This issues with the approval of Secretary, MeitY vide computer no. 3083442 dated 28.02.2022 and concurrence of Integrated Finance Division, MeitY vide computer no. 3083442 dated 04.02.2022.

Yours faithfully,

(Sandeep Kumar Ambasta)
Deputy Director

Copy to:
1.   Pay & Accounts Officer, Pay & Accounts Office. MeitY.
2.   Office of Principal Director of Audit, Scientific Department, Shamnath Marg, Civil Lines, Delhi – 110 054.
3.   Finance Division. MeitY.
4.   DDO, MeitY.
5.   Chief Investigator, Co-Investigators and Head of Implementing Agencies of the Projects.
6.   Economic Advisor, MeitY.
7.   Shri Vijay Kumar, Scientist 'F', MeitY.
8.   Shri Rajeshwar Singh Janwar, Scientist 'E', MeitY.
8.   Shri Bharat Gupta, Scientist 'D', MeitY and Sanction File.

(Sandeep Kumar Ambasta)
Deputy Director

1.	Title of Project:	Discourse Integrated Dravidian Language to Dravidian Language MachineTranslation (DL-DiscoMT)
2.	Implementation Agencies:	AU-KBC Research Centre, MIT Campus of Anna University, Chennai – Lead Institution And, IIIT Hyderabad, Central University of Hyderabad, ICFOSS Trivandrum, MIT Manipal, CDAC Noida, DAIICT Gandhinagar
3.	Chief Investigator:	Dr. Sobha L, AU-KBC
4.	Co-Investigator:	• Dr. DiptiMisra Sharma, IIIT Hyderabad • Dr. Parameswari K, Central University of Hyderabad • Dr. Rajeev R R. ICFOSS, Trivandrum • Dr. Aswath Rao, MIT, Manipal • MrsSunita Arora, CDAC Noida • Dr. PrasenjitMajumdar, DAIICT, Gandhinagar
5.	Background/Nature of Project:	

To build a Speech to Speech Translation System (SSMT) across Indian languages including Indian English is necessary in the Indian context to overcome the language barrier India has due to its multilingual context. It also calls for creating an environment to make use of the modern technologies in language computing for translating from one language to another by developing Machine Translation (MT) systems that can translate video or speech transcripts from English to Indian languages. As India has many language families, it is necessary to connect these language families and develop translation systems across these families. The Dravidian language to Dravidian language (DL DiscoMT) translation thus connect to Hindi to Tamil and from Tamil to other Dravidian languages. Thus Dravidian to Dravidian machine translation will be a component to Indian Language to Indian Language System though Hindi to Tamil system and to the larger Speech to Speech Machine translation system.

It is well-known fact that texts have properties that go beyond those of their individual sentences and that is shown by themselves in the frequency and distribution of words, word senses, referential forms and syntactic structures, including:

- Patterns of discourse coherence, as realized through explicit and/or implicit relations between sentences, clauses or referring forms;

- Anaphoric and elliptic expressions, in which speakers exploit the previous discourse context to convey subsequent information very concisey

Hence we need to see the translation not only at the sentence level but also at cross sentential level. Therefore in this project, we include discourse information of the type discussed above in building the translation system.

This project, we have planned, based on our experiences with the previous projects we have done such as the very recent project we completed SSMT funded by PSA office, India and the earlier

project on IL-IL MT funded by MeitY.

It is decided to develop a system for some specific domains and the domains considered are as given below:

Domians: Governance, Science and Technology (Biology, Chemistry, Physics, Computer Science Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering), Economics (FinTec), Health Care (Insurance and eMedical charts of Hospitals) , Agriculture(Farmer Related) .

6.	**Broad Objectives of the Project:**

- To develop and deploy machine translation (MT) system as a service from Hindi to Tamil and Tamil to other Dravidian languages which plays a critical role in the Indian language to Indian language Speech to Speech Machine Translation (SSMT) and Text to Text Machine Translation(TTMT) systems.
- To include Discourse Analysis (DA) in MT and improve the machine translation by identifying discourse and resolve various discourse markers and bring coherence and cohesion to the translated text and meet the challenges in MT arising from beyond the sentence level.
- To create and nurture an ecosystem involving start-ups, Central/State Government institutions working together to develop and deploy innovative products and translation services in Indian languages.
- To increase the content in Dravidian languages on Internet in the domains of Governance and Policy (Primary), Science and Technology, Education, Health, Agriculture etc.

7.	**Deliverables/Expected outcome in physical terms (as applicable):**

- A platform for handling Discourse and Conversation
- A text to text Machine Translation system from Hindi to Tamil, Tamil to Hindi, Kannada, Malayalam and Telugu Bi-direction systems. Incorporating discourse information in NMT and Sampark.
- Leaderboard platform for Evaluation
- Machine Translation solution as API/services which can be used for integrating with SSMT systems and by end users.

8.	**Duration of Project:** 3 Years
9.	**Milestones:**

Y1

Project Documentation on Plan and System Required Specification (SRS)
- Develop guidelines, standards and evaluation methods for corpora creation
- Enhancement & domain adaptation of engines and modules
- Data collection of 1 Lakh Sentences for Tamil: 25K each domain
- Parallel corpora for selected domain: 1 Lakh sentences for Tamil- Hindi pair, 50000 sentences for Tamil- Kannada, Malayalam, Telugu pairs, Corpus Annotation of created corpora for Kannada (25k Kannada monolingual corpora to be created)
- Morphological Analyser, POS, Chunk and Clause boundary, Transfer grammar, Morph Generator system development for Kannada with 60% accuracy
- Sampark Pipeline for Tamil- Kannada with 55% accuracy
- Sampark pipeline Enhancement for Hindi<->Tamil, Tamil<-> Malayalam and Tamil<->Telugu
- NMT model building with available corpus for Hindi- Tamil, Tamil- Malayalam and Tamil – Telugu (Bi-directional)
- Domain dictionaries

- Benchmark Data for selected domain
- Evaluation Leaderboard development (DAIICT and AU-KBC)
- Discourse and Conversation Annotation Guidelines and Tagset
- Automatic System to tag Discourse Chunks
- Annotated Corpus: 70,000 Coherent chunks in Hindi and Tamil and 35,000 coherent chunks in Kannada, Malayalam and Telugu
- Anaphora Resolution: Pronominal resolution
- Co-reference Resolution: Pronominal, Noun- Noun and Definite Description
- Connective resolution: Identification of argument of connective
- Conversation Analysis: Ellipsis and Gaps identification and resolution
- Development of Platform for handling Discourse and Conversation

Y2

- Enhancement & domain adaptation of engines and modules
- Corpus Annotation of created corpora for Kannada
- Morphological Analyser, POS, Chunk and Clause boundary, Transfer Grammar, Morphological Generator system development for Kannada with 70% accuracy
- Sampark Pipeline for Kannada (bi-directional) enhancement to 65%
- Sampark Pipeline for domain adaptation for Hindi<->Tamil, Tamil<-> Malayalam, Tamil<->Telugu.
- Validation of sample corpus obtained from Data Management Unit
- Incorporating Linguistic features and enhancing NMT
- Refinement of NMT models, Model training, tuning, testing; thorough evaluation
- Incorporation of Discourse parameters to Sampark system
- Alpha version release of Evaluation Leaderboard
- NMT model building with available corpus for Kannada
- Improvement of Domain dictionaries
- Benchmark Data for selected domain
- Enhancement of the following modules
- Anaphora Resolution: Pronominal resolution
- Co-reference Resolution: Pronominal, Noun- Noun and Definite Description
- Connective resolution: Identification of argument of connective
- Conversation Analysis: Ellipsis and Gaps identification and resolution
- Alpha Version-Release of Platform for handling Discourse and Conversation

Y3

- Enhancement & domain adaptation of engines and modules
- Morphological Analyser, POS, Chunk and Clause boundary, Transfer Grammar, Morphological Generator system development for Kannada with 75% accuracy
- Incorporation of Discourse parameters to Sampark system
- Sampark Pipeline for Kannada (bi-directional) enhancement to 80%
- Sampark Pipeline for domain adaptation for Hindi<->Tamil, Tamil<-> Malayalam, Tamil<->Telugu.90-95%
- Validation of sample corpus obtained from Data Management Unit
- Incorporating Linguistic features and enhancing NMT
- Refinement of NMT models, Model training, tuning, testing; thorough evaluation
- NMT model for Kannada with Bleu score of 25%
- Improvement of Domain dictionaries

- Development of pre & post-processing modules required for MT
- Enhancement of Anaphora Resolution: Pronominal resolution
- Enhancement of Co-reference Resolution: Pronominal, Noun- Noun and Definite Description
- Enhancement of Connective resolution: Identification of argument of connective
- Enhancement of Conversation Analysis: Ellipsis and Gaps identification and resolution
- Model training, tuning, testing; thorough evaluation
- Deployment of system and feedback
- Release of Evaluation Leaderboard
- Final Release of 1 Lakh sentences parallel corpora in Tamil-Hindi and 50,000 for 3 language pairs
- Final Release 8 Sampark System for 4 language pairs
- Final Release of 8 Hybrid NMT systems for 4 language pairs
- Final Release of Platform for handling Discourse and Conversation

10.	Agency with which link up is established/ proposed:	Langscape solutions, Ebashasetu, PraHar Knowledge Works, State Governments : Tamilnadu, Kerala, Karnataka, Telangana and AP
11.	Likely End User(s):	Students, Industry, Translation Services, Farmers, Health Organizations, e-Governance Services, Citizens and Governments
12.	Total Budget outlay (year wise):	

Sl No	Heads	Year1	Year2	Year 3	Total in lakhs
1	Equipment	31	9	5	45
2a	Manpower	234.80	234.80	260.12	729.72
2b	Manpower for special data Creation	160.93			160.93
3	Consumables	7.9	7.56	7.26	22.72
4	Travel and training	22.65	24.89	24.39	71.93
5	Contingency	22.00	21.50	21.50	65.00
6	Subtotal(2 to 5)	448.28	288.75	313.27	1050.30
7	Overheads 8%	35.86	23.10	25.06	84.02
8	Total	515.14	320.85	343.33	1179.32

Table 1: Budget for DL-DiscoMT

Institute wise Budget outlay:

International Institute of Information Technology, Hyderabad (IIIT Hyderabad)(Hindi)							
S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
1	Computational Linguists (Senior ResearcherPhD + 3 Experience)	2	60	14.40	14.40	15.60	44.40
2	Senior Linguist and senior software engineer	4	45	21.60	21.60	24.00	67.20

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
3	Senior Language Editors and analysts	1	35	4.20	4.20	4.80	13.20
4	Junior Language editor	2	25	6.00	6.00	7.20	19.20
5	Language Analysts (Data Creation for First Year Alone)	3		10.59	-	-	10.59
6	Manpower Total			56.79	46.20	51.60	154.59
7	Consumables			1	1	1	3
8	Travel and Training			4	4	4	12
9	Contingency			4	4	4	12
10	Sub Total (7+8+9)			9	9	9	27
11	Sub Total (6+10)			65.79	55.20	60.60	181.59
12	Overheads (at 8% of 11)			5.26	4.42	4.85	14.53
13	Equipment (laptops, Desktop, Servers Computers)			6	1	1	8
	Total (11+12+13)			77.05	60.62	66.45	204.12

Manipal Institute of technology, Manipal (MIT Manipal)(Kannada)

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
1	Computational Linguists (Senior ResearcherPhD + 3 Experience)	2	60	14.40	14.40	15.60	44.40
2	Senior Linguist and senior software engineer	3	45	16.20	16.20	18.00	50.40
3	Senior Language Editors and analysts	1	35	4.20	4.20	4.80	13.20
4	Junior Language editor	2	25	6.00	6.00	7.20	19.20
5	Language Analysts (Data Creation for First Year Alone)	4		14.19	-	-	14.19
6	Manpower Total			54.99	40.80	45.60	141.39
7	Consumables			1	1	1	3
8	Travel and Training			2	4	4	10
9	Contingency			4	4	4	12
10	Sub Total (7+8+9)			7	9	9	25
11	Sub Total (6+10)			61.99	49.80	54.60	166.39
12	Overheads (at 8% of 11)			4.96	3.98	4.37	13.31
13	Equipment (laptops, Desktop, Servers Computers)			6	1	1	8
	Total (11+12+13)			72.95	54.78	59.97	187.7

Central University of Hyderabad, Hyderabad. (HCU)(Telugu)

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
1	Computational Linguists (Senior ResearcherPhD + 3 Experience)	1	60	7.20	7.20	7.80	22.20
2	Senior Linguist and senior software engineer	2	45	10.80	10.80	12.00	33.60
3	Senior Language Editors and analysts	1	35	4.20	4.20	4.80	13.20
4	Junior Language editor	2	25	6.00	6.00	7.20	19.20
5	Language Analysts (Data Creation for First Year Alone)	2		7.20	-	-	7.20
6	Manpower Total			35.40	28.20	31.80	95.40
7	Consumables			1	1	1	3
8	Travel and Training			4	4	4	12
9	Contingency			4	4	4	12
10	Sub Total (7+8+9)			9	9	9	27
11	Sub Total (6+10)			44.40	37.20	40.80	122.40
12	Overheads (at 8% of 11)			3.55	2.98	3.26	9.79
13	Equipment (laptops, Desktop, Servers Computers)			6	1	1	8
	Total (11+12+13)			53.95	41.18	45.06	140.19

International Centre for Free and Open Source Software, Trivandrum. (ICFOSS)(Malayalam)

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
2	Senior Linguist and senior software engineer	2	45	10.80	10.80	12.00	33.60
3	Senior Language Editors and analysts	1	35	4.20	4.20	4.80	13.20
4	Junior Language editor	2	25	6.00	6.00	7.20	19.20
5	Language Analysts (Data Creation for First Year Alone)	3		10.80	-	-	10.80
6	Manpower Total			31.80	21.00	24.00	76.80
7	Consumables			0.50	0.50	0.50	1.50
8	Travel and Training			1	1	1	3
9	Contingency			1	1	1	3
10	Sub Total (7+8+9)			2.50	2.50	2.50	7.50
11	Sub Total (6+10)			34.30	23.50	26.50	84.30
12	Overheads (at 8% of			2.74	1.88	2.12	6.74

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
	11)						
13	Equipment (laptops, Desktop, Servers Computers)			2	1	1	4
	Total (11+12+13)			39.04	26.38	29.62	95.04

Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar (DA-IICT)(Evalution)

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
1	Senior software engineer	1	83,000	10	10	10	30
2	Manpower Total			10	10	10	30
3	Consumables			1.00	1.00	0.70	2.70
4	Travel and Training			1.00	1.00	0.50	2.50
5	Contingency			1.00	0.50	0.50	2.00
6	Sub Total (3+4+5)			3.00	2.50	1.70	7.20
7	Sub Total (2+6)			13.00	12.50	11.70	37.97
8	Overheads (at 8% of 7)			1.04	1.00	0.93	2.97
9	Equipment (laptops, Desktop, Servers Computers)			1	1	-	2
	Total (7+8+9)			15.04	14.50	12.63	42.17

CDAC NOIDA (HINDI, Discourse)							
S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
1	Senior software engineer	1	83,000	10	10	10	30
2	Language Analysts (Data Creation for First Year Alone)	2		7.20	-	-	7.20
3	Manpower Total			17.20	10.00	10.00	37.20
4	Consumables			1.50	1.00	1.00	3.50
5	Travel and Training			1.00	1.00	1.00	3.00
6	Contingency			1.00	1.00	1.00	3.00
7	Sub Total (4+5+6)			3.50	3.00	3.00	9.50
8	Sub Total (3+7)			20.70	13.00	13.00	46.70
9	Overheads (at 8% of 8)			1.66	1.04	1.04	3.74
	Equipment (laptops, Desktop, Servers Computers)			-	2	-	2
	Total (8+9+10)			22.36	16.04	14.04	52.44

AU-KBC Reserch Centre, Chennai (AUKBC) (Tamil and Malayalam)

S.No	Position	Nos	Salary per month per person Rs in Thousand	Year I	Year II	Year III	Total
1	Computational Linguists (Senior ResearcherPhD + 3 Experience)	4	60	28.80	28.80	31.20	88.80
2	**Senior Linguist and senior software engineer**	6	45	32.40	32.40	36.00	100.80
3	Senior Language Editors and analysts	1	35	4.20	4.20	4.80	13.20
4	Junior Language editor	2	25	6.00	6.00	7.20	19.20
5	**Language Analysts (Data Creation for First Year Alone)**	31		110.95	-	-	110.95
6	Software technical architect (for API creation and platform creationfor Discourse)	1	60	7.20	7.20	7.92	22.32
7	**Manpower Total**			189.55	78.60	87.12	355.27
8	Consumables			1.90	2.06	2.06	6.02
9	Travel and Training			9.65	9.89	9.89	29.43
10	Contingency			7	7	7	21.00
11	Sub Total (8+9+10)			18.55	18.95	18.95	55.45
12	Sub Total (7+11)			208.10	97.55	106.07	411.72
13	Overheads (at 8% of 12)			16.65	7.80	8.49	32.94
14	Equipment (laptops, Desktop, Servers Computers)			10	2	1	13.00
	Total (12+13+14)			234.75	107.35	115.56	457.66

13. **Special terms and conditions :**

- At the end of one year, models should be more accurate than available open-source models on the ULCA platform which is a mandatory Condition for project continuation **else the projects can be shortly closed.**

- In the case of research proposals, if performance criteria are met at the end of one year, PI may request additional funding for more corpus creation in the form of a new proposal which can be considered depending on the availability of funds.

- ULCA API based Data and Models should be made available in open source by maintaining the GitHub Repository by the concerned Researcher/Consortia/Ekstep/other contributor and then be ported from GitHub onto the Bhashini platform by the DevOps team of DIC. Source code should be released under an open-source license, and it should be downloadable, compiled, installed along with necessary data by anyone without any registration/permissions. The data to be released under CC-BY 4.0 license with attribution to NLTM, shall be used for any purpose by all.

		• The corpus funded to R&D under the Mission should be newly created and of Gold Standard and independent of the data to be developed under DMU. The process and methods to be developed to avoid duplication of data. The PI is responsible to collect all data required to meet their promised performance. However, PI may leverage the data developed by DMU, if applicable. The data source should be declared prior to the collection for avoiding data duplication among various stakeholders under the Mission. And, the corpus funded under the Mission is to be utilised for the generation of unique corpus only. The process to ensure this should be automatic through the platform. The three expert committees mentioned in the Mission Document will lay guidelines to ensure coordinated data development under the mission. The committees will be set up by MeitY and will function in close coordination with NHLT. These committees will also work on the development of more benchmarks in discussion with Consortia e.g. domain-specific etc.
14.	Project Review & Monitoring:	EC Committee will continue to work as PRSG.
15.	Benefits:	
		• Primary beneficiaries are the citizens, where the MT and the Discourse technologies can be used for developing various applications through which communication in their respective languages can happen between people. • Conversation translation can be used by industries such as tourism, Finance and for e-governance. • Translation of Educational contents such as lectures and documents into regional languages benefits the students who are not fluent in English. • This technology can reduce the gap between citizens which are persisting due to language difference.
16.	Stages for Release of Payment:	
		Pre-condition status of implementation: Issue of Administrative Approval and as per quantitative roadmap **Documentation to be supplied by Implementation Agency:** Acceptance to the terms and conditions of GIA, special terms and conditions for the Mission project, Progress Report, UC **Amount to be Released:** As per the recommendation of PRSG for release followed by the availability of fund and as proposed by Programme Division.

TERMS AND CONDITIONS GOVERNING GRANT-IN-AID

i) Terms & conditions governing Grants-in-aid for funding R&D Projects

I. Applicability

These terms & conditions apply to the institutions who receive Grants-in-aid from MeitY for undertaking R&D projects.

II. Definition

In these instructions:

1) The "institution" means any technical, scientific or academic establishment where research work is carried out through funding by MeitY. (including R&D Laboratories, Autonomous Scientific Societies etc.)

2) "Inventor" means researcher/ employee of the Institution whose duties involve carrying out scientific or technical research work in an R&D project funded by MeitY.

3) "Intellectual Property Rights" include patents, trademarks, registered designs, copyrights and layout design of integrated circuits.

III. General Conditions

(1) The grant is for undertaking the specific project as approved by MeitY and shall be subject to the following conditions:
   (i) The grant shall be spent for the project within the specified time
   (ii) Any portion of the grant which is not ultimately required for expenditure for the approved purposes shall be duly surrendered to MeitY.

(2) For a project being executed by MeitY grant, Application by grantee institution for any other financial assistance or receipt of grant/loan from any other Agency/ Ministry/ Department for the same project should have the prior permission/approval of MeitY.

(3) The grantee institution is not allowed to entrust the implementation of this project for which Grants-in-aid is received, to another institution and to divert the Grants-in-aid received from MeitY as assistance to the later institution. However available IP core etc. could be procured with due payment of license fee as per the recommendations of PRSG.

(4) The investigator(s) should not enter into collaboration with a foreign party (individual/ academic institution/ industry) in execution of this project without prior approval of MeitY.

(5) The grantee institution(s) shall make all efforts to protect the Intellectual Property Rights (IPR) being generated through the research project and follow the section "Guidelines for IPR" as laid by MeitY.

(6) The grantee institution, while undertaking the technology transfer/commercialization activities, shall follow the procedure laid down by their own institution. In case there is no such procedure/framework within the grantee institution, a transparent mechanism based on the guidelines indicated at section "Guidelines for Technology Transfer/ commercialization" of MeitY shall be followed.

(7) In case the grantee institution does not license the patent/ commercialise the technology within a period of 5 years from the time of obtaining the patent/ development of technology, the grantee institution will make available the patent/technology in public domain for usage by Indian companies/ MSMEs/ start-ups/ entrepreneurs/ citizens.

(8) The Grantee institution should indemnify MeitY from any legal and/ or financial encumbrance arising out of any infringement of IPR/ licensing of IPR/ technology transfer/ commercialization.

(9) Any dispute on any matter related to the implementation of the project, the decision of Secretary, MeitY, shall be final and binding on the grantee institution.

(10) MeitY reserves the right to modify these terms and conditions governing the grant-in-aid from time to time reflecting the directions of the Government of India.

IV. Monitoring & Review of the project

MeitY shall appoint a Project Review and Steering Group (PRSG) comprising of representatives from MeitY and other experts to periodically review and monitor the technical and financial status of the project. PRSG will periodically monitor the project in all respects including technical and financial progress of the project.

V. Acquisition & Management of Assets

(1) The grantee institution shall maintain an audited record in the form1of a register in the prescribed proforma for permanent, semi-permanent assets acquired solely or mainly out of the MeitY grant. The applicable procedures for procurement shall be followed for acquisition of assets.

(2) The assets referred to above will be the property of MeitY and should not, without prior sanction of MeitY, be disposed off or encumbered or utilised for the purposes other than those for which the grant has been sanctioned

(3) The grantee institution shall send a list of assets referred above to MeitY at the end of each financial year as well as at the time of seeking further instalments of the grant;

(4) Should at any time grantee institution cease to exist, such assets etc., shall revert to MeitY;

(5) At the conclusion/ termination of the project, the Government of India will be free to sell or otherwise dispose off the assets which are the property of the Government. The Institution shall render to the Government necessary facilities for arranging the sale of these assets. The Government of India has the discretion to transfer the assets to the concerned institution or any other institution if it is considered appropriate.

VI. Utilization of Grants and Audit

(1) The grantee institution should maintain separate audited account for the project. If it is found expedient to keep a part or whole of the grant in a bank account earning interest, the interest, thus earned should be reported to MeitY. The interest so earned will be treated as a credit to the grantee institution to be adjusted towards future installment of the grant; MeitY or its nominee/s will have the right of access to the books and accounts of the grantee institution for which a reasonable prior notice would be given

(2) The grantee institution shall render an audited statement of accounts and utilization certificate to MeitY every year. The audited statement of accounts relating to grants given during financial year together with the comments of the auditor regarding the observance of the conditions governing the grant should be forwarded to the MeitY within six months following the end of the relevant financial year;

(3) The utilisation of grant for the intended purposes will be looked into by the Auditor of grantee institution according to the directives issued by the Government of India at the instance of the Comptroller and Auditor General and the specific mention about it will be made in the audit report;

(4) The grantee institution shall render progress-cum-achievement reports at interval of not exceeding six months on the progress made on all aspects of the project including expenditure incurred on various approved items during the period.

(5) The grantee institution will refund unspent balance in addition to the interest, if any accrued on the unspent balance in the total outlay of the project.

(6) Ministry or Department will be at liberty to take appropriate action under the Rule 212(1) of GFR 2005 relating to utilization of funds in the specified time and where such certificate is not received from the grantee within the prescribed time (reference General Financial Rules 2005).

VII. Guidelines for managing IPRs:

1. The IPR arising out of sponsored project(s) will be with grantee institution(s). While the patent may be taken in the name(s) of inventor(s), the institution(s) shall ensure that the IPR is assigned to institution(s). In cases where the funding/resourcing of

researchers have been done jointly with other organizations, the IP rights would be appropriately shared among them.

2. The Government of India/ Government bodies (including its PSUs, Government autonomous societies & section 25 companies) shall have right to obtain a royalty- free license for the Intellectual Property for deployment/use of the same for non-commercial purposes. However, in case, IP is proposed for commercial usage, the terms of licensing may be mutually agreed with the grantee institution(s) possessing IPR.

3. The grantee institution shall submit the financial requirements for filing of IPR as part of the R&D proposal. The contingency head could be used for provisioning of the expenditure for filing of IPR with a ceiling of Rs. 15 Lakhs for the cost of initial filing, but excluding for the annuity fee. International Patent filing will be permitted. The amount will be released based on the recommendations of PRSG constituted by MeitY for the concerned project. If, for any reason, it is not possible to meet the expenses from the project grant, like in the case of the need for filing of IPR arising after the closure of the project, an application may be made separately by the institution to MeitY for sanction/ reimbursement of the expenses incurred in filing of the IPR.

4. The grantee institution shall inform MeitY about the patents filed/obtained and IPR arising out of the R&D project on annual basis over the project duration and subsequent 5 years period after the project closure.

5. The grantee institution shall provide information to MeitY about trading/ selling/ transferring /licensing the IP rights, within a period of 6 weeks from conclusion of the agreement relating to such a commercial event.

6. The grantee institution shall take appropriate licence in case of export of 'Special Chemicals, Organisms, Materials, Equipment and Technologies' (SCOMET) items as per the prevailing provisions of Foreign Trade Policy from Directorate General of Foreign Trade, under Department of Commerce, Government of India.

7. As the R& D is supported by public fund, the grantee institution should ensure that the interests of India and its citizens are fully protected, while licensing of patents/transfer or commercialization of technology.

8. The institution is permitted to retain the benefits and earnings arising out of the IPR for plough back to pursue research/research related activities.

9. Notwithstanding the above, MeitY reserves the right to take over ownership of the rights of the Intellectual property arising out of this project, in the interest of the Indian sovereignty, without any compensation to the grantee institution.

VIII. Guidelines for Technology Transfer/commercialization:

The Grantee institution may use the following guidelines in case there is no laid down Procedure within their own institution:

(1) The transfer of technology may normally be undertaken by the central office of the grantee institution equipped to handle legal issues with regard to technology/ IP licensing.

(2) The grantee institution shall constitute a Transfer of Technology (ToT) Committee for evaluation of the applications for ToT and for working the appropriate revenues expected out of the ToT

(3) Prior to seeking the expression of interest for technology transfer/ commercialization, there should be sufficient disclosure of the technical details, features and capabilities of the project through advertisement, publication on the websites of the Institution and of MeitY, and exhibitions, if any held on the related themes during the relevant period. The ToT proposal may be given wide publicity in one national daily besides in journals relating to the theme and by writing to the industry associations related to the theme.

(4) Normally, a period of 6 weeks shall be given for interested parties to file their applications relating to Expression of Interest , which may require customization based on the technology/product/service/prototype proposed to be transferred by the grantee institution.

(5) The ToT Evaluation Committee shall undertake a techno-commercial evaluation of the proposals received, adopting a 2-stage process.

(6) The ToT committee formed by the grantee institution will work out the cost of ToT on case-to-case basis considering the ground realities like i) development cost of the project ii) market demand of the technology/product iii) ability of the industry to pay for the technology iv) work involved from prototyping to packaging. The cost of capital equipment will be excluded from the total cost of development. Such an estimated cost shall be used as the Internal Bench Mark (IBM) for evaluating the ToT fee and royalty, in Stage 2.

(7) After due diligence by the ToT committee a technology transfer/ licensing agreement shall be signed which shall include license of IPRs through existing legal procedures.

(8) It is desirable that technology be transferred on a non-exclusive basis. Exclusive licensing should be in the rarest of rare cases based on sufficient justification by the ToT Evaluation Committee and approval by the Head of the institution! Competent Authority and with the approval of MeitY.

(9) The institution is permitted to retain the benefits and earnings arising out of the technology transfer/ licensing of IPRs for ploughing back to pursue research in related areas.

IX. Guidelines for publication of results

(1) Investigators wishing to publish technical/ scientific papers based on the research work done under the project, should acknowledge the assistance received from this Department and a copy of the communicated/published paper he sent to MeitY.

(2) If the results of research are to be legally protected for the intellectual property, then its publication can be undertaken only after due care is taken for legal protection of the intellectual property rights.

Note:

(1) While submitting the project proposal, a certificate of acceptance of terms and conditions and undertaking to follow the guidelines as above needs to be given by the chief investigator and endorsed by the competent authority of the institution. For any deviation from the terms & conditions and guidelines, the grantee institution will take the permission/approval of the competent authority of MeitY.

(2) The guidelines for managing IPR and Technology Transfer/ commercialization will not be applicable for the following exceptions and specific approvals have to be taken in respect of IPR and ToT:

(i) The R&D projects of strategic applications:

The projects jointly funded by/for strategic Departments like Defence, Space and Atomic Research etc.

Specific Terms & Conditions governing Grants-in-aid relating to the Consortium mode project:

Responsibilities of Consortium Leader

i) The MeitY Grants-in-aid will be released to the consortia leader who in turn will release the assigned funds to the consortia members based on the requirements and satisfactory performance of the consortia member and the recommendations of PRSG/ MeitY.

ii) Consortia Leader would ensure the delivery of the end product as per specified Software Requirement Specifications (SRS).

iii) Evolve Standards and Evaluation Mechanism for modules/ sub-systems/components as well as the end product.

iv) Evolve internal monitoring mechanisms for consortium members

v) Integration Testing and resolving interface issues of the modules developed by CMs.

vi) Submission of Software life cycle documents to MeitY.

vii) Obtaining individual Utilization Certificate / Statement of Account/Audited Statement of Account/ Six-monthly Financial and Technical Progress Report etc. from Consortium Members and submission of consolidated Utilization Certificate / Audited Statement of Account / Progress Report to MeitY.

Responsibilities of Consortium Members

i) Development of modules/sub-systems/components /defined interface assigned to them

ii) Close interaction with Consortium Leader and other Consortium Members to ensure delivery of the module.

iii) Cooperation with Consortium Leader regarding monitoring and evaluation of assigned modules/sub-systems/components /defined interface.

Submission of Utilization Certificate / Statement of Account /Audited Statement of Account/ Six-monthly Financial and Technical Progress Report etc. to Consortium Leader for submission to MeitY.