## कन्द्रीय संस्कृत विश्वविद्यालय

संसद के अधिनियम द्वारा स्थापित (को में राष्ट्रिय संस्कृत संस्थान, मार्जित विश्वविक 56-57, मास्कानिक क्षेत्र, जनकपुरी, नई दिस्सी - 110058



## Central Sanskrit University

Established by an Act of Parliament

(Formerly Rashtriya Sanskrit Sansthan, Deemed to be University) 56-57, Institutional Area, Janakpun, New Debi - 110056

F.No.CSU/Ashtaadashi-II/2018-19/22/29

Dated:22.02.2022

To

The Registrar Karnataka Samskrit University Pampa Mahakavi Road, Chamarajpete, Bengaluru - 560 018 (Karnataka)

Sub.:- Providing financial assistance under "Ashtaadashi (18 Projects)" for the year 2018-19.

In reference to the above cited subject matter, I am directed to convey the approval of Grant-in-Aid Committee and Competent Authority of the University for providing financial assistance of Rs.1.00,000/- (Rupees one lakh only) under Ashtaadashi (18 Projects) in order to conduct/complete the following project:-

De la Contra de	Sanctioned Grant-in-Aid
Project Name:  Editing & Publishing of the Manuscripts-Tarkachudamani Sabda Khanda-A sub-Commentary of Tatvachintamani (Principal Investigator-Dr. K.E. Sri Venkata	Rs.200000/-
Nathan)	

In this context, it is further informed that in terms of Ashtaadashi Guidelines, 50% of the sanctioned Grant-in-Aid i.e. Rs.1,00,000/- (Rupees one lakh only) has already been electronically transferred to your account. The balance amount will be released (as per clause No. 13 of Ashtaadashi guidelines) on the recommendations of the Expert Committee, on submission of statement of expenditure to the extent of at least 80% of the grant released of the first instalment and utilization certificate of the sanctioned Project. Thereafter, the University shall consider release of 2nd instalment of 40% of the approved project budget. At last, final 10% of the approved project budget will be released only after completion of the said Project, submission of accounts/expenditure & utilization certificate of the sanctioned amount and detailed report on project (in soft & hard copy) etc. in the prescribed proforma (Form No. Ashtaadashi -III to VII).

In addition, University has reserve the right to inspect the project at any time without prior intimation. Hence, Project Director should make available to University the project initiative details (Project starting, dates, Timing, place, venue, concerned person name & phone number etc.). The Grant-in-Aid must be utilized by strictly followed Ashtaadashi Guidelines. The projects/activities conducted with financial assistance of the CSU under the scheme must be acknowledged by appropriate displaying of name & logo of CSU and also as per revised estimate submitted by you.

Therefore, you are hereby requested to initiate further necessary steps to start the project works keeping in view set up norms of Ashtaadashi guidelines, which is also available in the University's website i.e. www.sanskritnic.in .

This issues with the approval of the Competent Authority.

Yours faithfully,

(Prof. R.G. Murali Krishna) Ashtaadashi I/c

20.820 A (2012) 2029

GENERAL ENQUIRY: 011-28520977, 28521994, 28524993, 28524995, 28525963

VC. 28523949, REGISTRAR: 28520979, ACD::28521948, ADMIN::28524532, EXAM::28521258, N.F.S.E.::28524387, MSP - 28523611, SCHEMES::28520966, EMAIL::centralsanskrituniversity@gmail.com, WEBSITE::www.sanskrit.nic.in

# ट्रय संस्कृत संस्थान

भागत विश्वविद्यालय

(भापन संसाधन विकास भंत्रालय, भारत सरकार के तत्त्वाधान में संगालित) 86-87. इन्स्टीटबूशनल एरिया, जनकपुरी, नई दिल्ली-110058



#### RASHTRIYA SANSKRIT SANSTHAN DEEMED UNIVERSITY

(Established under the Auspices of the Ministry of Human Resource Development, Govt. of India)

56-57, Institutional Area, Janakpuri, New Delhi-110058

RSkS/36013/Ashtaadashi/02/2018-19/1855

To

The Registrar Karnataka Samskrit University Pampa Mahakavi Road, Chamarajpete, Bengaluru-560018 De Assessand and

Sub.:- Financial Assistance under "Ashtaadashi" (18 Projects) 2018-19 for sustaining the growth of Sanskrit recommended by the Committee to suggest vision and Road Map for the Development of Sanskrit - 10 Year Perspective Plan - reg..

Sir.

The Rashtriya Sanskrit Sansthan (Deemed University), set up by Government of India for propagation and promotion of Sanskrit language and Nodal Agency to the Government of India for implementing its related programmes and policies, invited applications for financial assistance under the Ashtaadashi (18 Projects) from the Universities/Education Institutions/Organizations vide notification No. RSkS/36013/Ashtaadashi/01/2018-19 dated 05.02.2018.

Further, the Competent Authority has constituted a High-level Committee to examine the proposals, received from various institutions & agencies. Based on the submitted proposal (s) and after an interface meeting with the concerned institutions/agencies, the Committee submitted its recommendations. The recommendations were considered and approved by the GIAC in its 26th meeting held on 05.12.2019 at Indian International Centre, New Delhi, under agenda item no. 26.14.

Now, therefore, I am directed to convey the tentative approval/sanction of the Competent Authority for Grant-in-Aid under Ashtaadashi Scheme (18 Projects) for conducting the project is as follows:-

Project Name:-	Grant-in-Aid:-
Reprint of Rare Books -"Bodhayaneeya Brahmakarma Samucchaya"	Rs.300000/-
(Principal Investigator- Dr. Ramakrishna Bhat K)	(three lakh only)

It is further informed that Guidelines of Scheme for Ashtaadashi - Eighteen Projects for sustaining the growth of Sanskrit, which approved by the GIAC in its meeting on 22.08.2017 and the list of projects recommended by the High-Level Scrutiny Committee under Ashtaadashi is available at Sansthan's website - http://www.sanskrit.nic.in/ashtaadashi.php You may kindly go through the recommendations/findings of the Committee and make necessary modifications/ rectifications/re-appropriation of budget etc., and submit in Form No. Ashtaadashi - I which is also a part of the Guidelines of Scheme, to Sansthan for final approval.

The 50% or 75% of the sanctioned Grants-in-Aid i.e. Rs.150000/- (one lakh fifty thousand only) will be released to you after the receipt of required documents. The balance amount will be released as per clause (Ashtaadashi guidelines) No. 13 & after completion of the 1st phase of the Project. Consequently, if the Principal Investigator of the Project is willing to do the project within the sanctioned budget then declaration for acceptance is to be submitted to Sansthan, in prescribed proforma (Form No. Ashtaadashi - II).

Contd. /-

# केन्द्रीय संस्कृत विश्वविद्यालय

संसद के अधिनियम द्वारा स्थापित (पूर्व मे गाँद्रिय सस्वत सस्यान, मानित विश्वविद्यानय) शिक्षा मन्त्रालय, भारत सरकार के अधीन 55-57, सास्थानिक क्षेत्र, जनकपुरी, नई दिल्ली - 110058



# Central Sanskrit University

Established by an Act of Parliament

(Enricet), Randinga Canabid Barathan, Deumed to be University) Under Ministry of Education Govt of Indiighthational Area Janakpuri, New Della - 1100ne

Dated:14.02.2023

F.No.CSU/Ashtaadashl-V/2021-22/24/ 09 53

To

The Registrar Karnataka Samskrit University, Bengaluru Pampa Mahakavi Road, Distt.- Nagpur, Maharashtra - 441 106.

Sub.:- Providing financial assistance under "Ashtaadashi (18 Projects)" for the year 2021-22.

In reference to the above cited subject matter, I am directed to convey the approval of Grantin-Aid Committee and Competent Authority of the University for providing financial assistance of Rs.1,29,250/- (Rupees one lakh twenty nine thousand two hundred fifty only) under Ashtaadashi (18 Projects) in order to conduct/complete the following project:-

Projects) in order to community	Sanctioned Grant-in-Aid
Project Name: Edition of (Tatvachintamani) Alokagadhadari-Shabdhakhanda of Gadadhar Bhattacharya (P.I- Dr. Bhaskar Bhatt Joshi)	Rs.258500/- (two lakh fifty eight thousand five hundred only)

In this context, it is to inform in terms of Ashtaadashi Guidelines that 50% of the sanctioned Grant-in-Aid i.e. Rs.1,29,250/- (Rupees one lakh twenty nine thousand two hundred fifty only) has already been electronically transferred to your account on 07.02.2023 (copy enclosed). The balance amount will be released (as per clause No. 13 of Ashtaadashi guidelines) on the recommendations of the Expert Committee, on submission of statement of expenditure to the extent of at least 80% of the grant released of the first instalment and utilization certificate of the sanctioned Project. Thereafter, the University shall consider to release of 2<sup>nd</sup> instalment i.e. 40% grant of the approved project. At last, final 10% of the grant of approved project will be released only after completion of the said Project, submission of accounts/expenditure & utilization certificate of the sanctioned amount and detailed report on project (in soft & hard copy) etc. in the prescribed proforma (Form No. Ashtaadashi -III to VII).

In addition, University has reserved the right to inspect the project at any time without prior intimation. Hence, Project Director should make available to the representative of the University regarding the project initiative details (Project starting, dates, Timing, place, venue, concerned person name & phone number etc.). The Grant-in-Ald must be utilized by strictly following Ashtaadashi Guidelines. The projects/activities conducted with the financial assistance of CSU under the scheme, must be acknowledged by appropriate displaying of name & logo of CSU and also as per revised estimate submitted by you.

Therefore, you are hereby requested to initiate further necessary steps to start the project works keeping in view of Ashtaadashi guidelines, which is also available in the University's website i.e. www.sanskrit.nic.in .

This is issued with the approval of the Competent Authority.

Yours faithfully

(Dr. Chakradhar Meher) Ashtaadashi I/c

GENERAL ENQUIRY: 011-28520977, 28521994, 28524993, 28524995, 28525963

VC : 28523949, REGISTRAR : 28520979, ACD : 28521948, ADMIN : 28524532, EXAM : 28521258, N.F.S.E. : 28524387. MSP; 28523611, SCHEMES 28520966, EMAIL: centralsanskrituniversity@gmail.com, WEBSITE: www.sanskrit.nic.in



## REQUEST LETTER

Date: 10/12/2022

Letter no: SGS/001/2022-2023/BOC-A0001/49

From,
The Director,
School of Science,
JAIN (Deemed to be University)
J.C. Road, Bangalore-27

To Prof. Shivani, Dean, Shastra Faculty, Head, Dept. of Vyakarana, Karnataka Sanskrit University, Bangalore

Sub: Request for permission to undergo an internship for 30 days at your esteemed institution.

Dear Madam,

JAIN (Deemed to be University) was awarded the Deemed-to-be University status under Sec 3 UGC Act by the Ministry of HRD on 24<sup>th</sup> July 2009. Though we have always been a forward-looking organization, this recognition not only adds impetus to our purpose but also makes us strive harder for the larger cause of quality education.

At JAIN, we believe that no education is complete without a practical understanding and it is imperative to bridge the gap between theory and practical by getting hands-on experience. These kinds of endeavors go a long way in not just helping the students understand the complexities of the application of knowledge but also inducting them into the professional world. This ultimately also helps in the holistic development of the personality of the youngster.

In this regard, it is my request to you to consider K Sai Akshay, 20BSR18055, BSc. Data Science and Analytics of 2020-2023 batch (Pursuing), who is a *bonafide* student of our institution to undergo internship in your organization for a period of 30 days.

I assure you that our students will follow all the codes and conduct of your organization and prove themselves to be their best during the course of their internship.

On behalf of the University, I extend my gratitude for your support and encouragement. Awaiting your response,

Thanking You.



Dr. Asha Rajiv
Director
School of Sciences - B-II
JAIN (Deemed to be University)
JAIN, Deemed to be University)
JAIN, Deemed to be University)

# 91/2, Dr. A N Krishna Rao Road V V Puram, Bangalore - 560 004 **P** +91-80-4343 1000 45<sup>th</sup> km, NH - 209, Jakkasandra Post Kanakapura Taluk, Ramanagara District - 562 112 **P** +91-80-2757 7250 - 258



#### REQUEST LETTER

Date: 09/12/2022

Letter no: SGS/001/2022-2023/BOC-A0001/49

From,
Dr. S.THIRUKUMARAN / Associate Professor,
Department of Data Science and Analytics,
School of Science,
JAIN (Deemed to be University)
J.C. Road, Bangalore-27

To
The Director,
School of Science,
JAIN (Deemed to be University)
J.C. Road, Bangalore-27

Sub: Request for permission to undergo an internship for 30 days at your esteemed institution.

Respected Madam,

JAIN (Deemed to be University) was awarded the Deemed-to-be University status under Sec 3 UGC Act by the Ministry of HRD on 24<sup>th</sup> July 2009. Though we have always been a forward-looking organization, this recognition not only adds impetus to our purpose but also makes us strive harder for the larger cause of quality education.

At JAIN, we believe that no education is complete without a practical understanding and it is imperative to bridge the gap between theory and practical by getting hands-on experience. These kinds of endeavors go a long way in not just helping the students understand the complexities of the application of knowledge but also inducting them into the professional world. This ultimately also helps in the holistic development of the personality of the youngster.

In this regard, it is my request to you to consider K Sai Akshay, 20BSR18055, BSc. Data Science and Analytics of 2020-2023 batch (Pursuing), who is a *bonafide* student of our institution to undergo internship in your organization for a period of 30 days.

I assure you that our students will follow all the codes and conduct of your organization and prove themselves to be their best during the course of their internship.

J.C. Road Bangalore-27

On behalf of the University, I extend my gratitude for your support and encouragement.

Awaiting your response,

Thanking You. (

Dr. S.THIRUKUMARAN

Associate Professor,

Department of Data Science and Analytics,

School of Science, JAIN (Deemed to be University)

s.thirukumaran@jainuniversity.ac.in

Dr. Asha Rajiv

Sch seheb poies General

**Corporate Office:** 

# 91/2, Dr. A N Krishna Rao Road V V Puram, Bangalore - 560 004 **P** +91-80-4343 1000 Jain Global Campus

45<sup>th</sup> km, NH - 209, Jakkasandra Post Kanakapura Taluk, Ramanagara District - 562 112 **P** +91-80-2757 7250 - 258



#### LETTER OF RECOMMENDATION

I am delighted to recommend Mr. K SAI AKSHAY for the Internship at your University, I've known K SAI AKSHAY since he was a second-year student at the JAIN (Deemed-to-be-University) in Bangalore, India, where she was studying machine learning and natural language processing. His laboratory work for these subjects has also been under my supervision. I 've interacted both personally and academically with K SAI AKSHAY during this period.

I have seen how diligently and consistently he has worked, gradually increasing his subject knowledge and practical skills with each succeeding semester. There was extensive attention to detail, precision, and flexible learning observed in him. He could grasp the complexities of Python coding with ease. His good command of the language, his interpersonal skill, and his active participation all the events have been commendable.

Doing well academically and he is involved in other sectors too. He has successfully been part of the Sanskrit club of the college and representing as the Executive head of the club. He is open to learning from peers and faculty members and accepting alternate views. In him, I find the commitment desirous of a good student, meticulous with the right blend of aptitude, merit, and determination.

I have every faith and confidence in his abilities, and I am sure that he will make an excellent graduate student with him self-belief and hard work. I believe that he has the required knowledge and skill set to excel in this Internship. Hence, I highly recommend him for your internship program.

Sincerely,

ajaine Joilan 12.2022

Head

DR. RAJANI JAIRAM

Department of Languages
JAIN (Deemed to be University)
Bangalore

(Ph D in Sanskrit)

Professor in Sanskrit

Head, Department of Languages

Dean (Student Welfare)

JAIN (Deemed-to-be-University)

# द्रीय संस्कृत विश्वविद्यालय

संसद के अधिनियम द्वारा स्थापित (पूर्व में राष्ट्रिय संस्कृत संस्थान, मानित विश्वविद्यालय) शिक्षा मन्त्रालय, भारत सरकार के अधीन 56-57. सारधानिक धेत्र, जनकपुरी, नई दिल्ली - 110058



# Central Sanskrit University

Established by an Act of Parliament

(Formerly Rashtnya Sanskrit Sansthan, Deemed to be University) Under Ministry of Education, Govt, of India 56-57, Institutional Area, Janakpurt, New Delta, 110/58

Dated: 14.02.2023

F.No.CSU/Ashtaadashl-V/2021-22/23/25 2

To

The Registrar Karnataka Samskrit University, Bengaluru Pampa Mahakavi Road, Distt.- Nagpur, Maharashtra - 441 106.

Sub.:- Providing financial assistance under "Ashtaadashi (18 Projects)" for the year 2021-22.

Sir.

In reference to the above cited subject matter, I am directed to convey the approval of Grantin-Aid Committee and Competent Authority of the University for providing financial assistance of Rs.7,50,000/- (Rupees seven lakh fifty thousand only) under Ashtaadashi (18 Projects) in order to conduct/complete the following project:-

Project Name:	Sanctioned Grant-in-Aid
Shabdashala Project - Mahakosha (The Knowledge Net of all Ancient	Rs.1500000/-
Sanskrit Koshas) (P.I Prof. Shivani V)	(fifteen lakh only)

In this context, it is to inform in terms of Ashtaadashi Guidelines that 50% of the sanctioned Grant-in-Aid i.e. Rs.7,50,000/- (Rupees seven lakh fifty thousand only) has already been electronically transferred to your account on 07.02.2023 (copy enclosed). The balance amount will be released (as per clause No. 13 of Ashtaadashi guidelines) on the recommendations of the Expert Committee, on submission of statement of expenditure to the extent of at least 80% of the grant released of the first instalment and utilization certificate of the sanctioned Project. Thereafter, the University shall consider to release of 2<sup>nd</sup> instalment i.e. 40% grant of the approved project. At last, final 10% of the grant of approved project will be released only after completion of the said Project, submission of accounts/expenditure & utilization certificate of the sanctioned amount and detailed report on project (in soft & hard copy) etc. in the prescribed proforma (Form No. Ashtaadashi -III to VII).

In addition, University has reserved the right to inspect the project at any time without prior intimation. Hence, Project Director should make available to the representative of the University regarding the project initiative details (Project starting, dates, Timing, place, venue, concerned person name & phone number etc.). The Grant-in-Aid must be utilized by strictly following Ashtaadashi Guidelines. The projects/activities conducted with the financial assistance of CSU under the scheme, must be acknowledged by appropriate displaying of name & logo of CSU and also as per revised estimate submitted by you.

Therefore, you are hereby requested to initiate further necessary steps to start the project works keeping in view of Ashtaadashi guidelines, which is also available in the University's website i.e. www.sanskrit.nic.in .

This is issued with the approval of the Competent Authority.

Yours faithfully,

(Dr. Chakradhar Meher) Ashtaadashi I/c भारत सरकार

Government of India इत्तेषट्रॉनियस और सूचना प्रौद्योगिकी मंत्रालय

Ministry of Electronics & Information Technology इलेक्ट्रॉनिक्स निकेतन, ६, सी जी ओ कॉम्प्लेक्स, नई दिल्ली-110003

Electronics Niketan, 6, C G O Complex, New Delhi-110003

Website: www.meity.gov.in

संख्या

दिनांक

No.11(1)/2022-HCC(TD1L)-Part(7)

Date 25.03.2022

## ADMINISTRATIVE APPROVAL

Subject: Administrative Approval for implementation of the Sub Project 'An Interpretable Unified Framework for Text-to-Text Translation among Indian Languages using Sanskrit-based Interlingua Representation' under the Project titled 'National Language Translation Mission (NLTM): BHASHINI'.

Implementing Agency:

IIT, Kharagpur – Consortium Leader and IIT Bombay, IIT Kanpur, IISc Bangalore, Karnataka Samskrit University,

C-DAC Bangalore as Consrotium Members.

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 the duration of the Mission.

- 2. Now, the undersigned is directed to convey the Administrative Approval for the implementation of the sub-project namely 'An Interpretable Unified Framework for Text-to-Text Translation among Indian Languages using Sanskrit-based Interlingua Representation' under the Project titled 'National Language Translation Mission (NLTM): BHASHINI' to be implemented by IIT, Kharagpur Consortium Leader and IIT Bombay, IIT Kanpur, IISc Bangalore, Karnataka Samskrit University, C-DAC Bangalore as Consrotium Members at the total outlay of the project is Rs. 3,43,76,700/- (Rupees three crore forty-three lakh seventy-six thousand seven hundred 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.

This issues with the approval of Secretary, MeitY vide computer no. 3083439 dated 23.03.2022 and concurrence of Integrated Finance Division, MeitY vide computer no. 3083439 dated 04.02.2022.

(Sandeep Kumar Ambasta)
Deputy Director

## Copy to:

- 1. Pay & Accounts Officer, Pay & Accounts Office. MeitY.
- Office of Principal Director of Audit, Scientific Department, Shamnath Marg, Civil Lines, Delhi – 110 054.
- 3. Finance Division. MeitY.
- 4. DDO, MeitY (two copies).
- 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.
- 9. Shri Bharat Gupta, Scientist 'D', MeitY and Sanction File.

(Sandeep Kumar Ambasta) Deputy Director \[
\int \text{Annexure − 1} \text{ to the Administrative Approval No. 11(1)/2022-HCC(TDIL)-Part(7) dated 25.03.2022.
 \]

1.	Title of Project:	An Interpretable Unified Framework for Text-to-Text Translation among Indian Languages using Sanskrit-based Interlingua Representation				
2.	Implementation Agencies:	IIT, Kharagpur – Consortium Leader and IIT Bombay, IIT Kanpur, IISc Bangalore, Karnataka Samskrit University, C-DAC Bangalore as Consrotium Members.				
3.	Chief Investigator:	Pawan Goyal, Associate Professor, IIT Kharagpur				
4.	Co-Investigator: PIs from other institutes:					
		Ganesh Ramakrishnan (IIT Bombay), Arnab Bhattacharya (IIT Kanpur), Prathosh A.P (IISc Bangalore), Shivani V (Karnataka Sanskrit University), Annarao Kulkarni (CDAC, Bangalore)				
	<b>建筑的</b>	Co-investigator:				
		Sudeshna Sarkar (IIT Kharagpur)				
5.	Research and Development					
	system for the translation of text proposes to use an interlingual for of Sanskrit. The project will focus subset of Indian languages such	linguistically faithful and interpretable translation among multiple Indian languages. The project ramework rooted in the traditional grammatical system on Hindi, Sanskrit and Kannada as a representative that any observations and research innovations languages would benefit other languages.				
6.	Broad Objectives of the Project:					
	Towards the primary objective of following sub-objectives:	text-to-text translation, the project will have the				
		ngua interpreter that can capture linguistic considered under the framework and facilitate es				
	b) Develop a text-to-text (T2T) tradifferent languages and the inter	anslation module for translation among text in lingua structure				

c) Human benchmarking of explainability and linguistic correctness of interlingua as a post-hoc explainer Deliverables/Expected outcome in physical terms (as applicable): 7. T2T translation systems (Language pairs corresponding to Sanskrit, Hindi, Kannada): The interlingua-based translation models for improved interpretability and faithfulness: API and Web-interface. The models are expected to be more accurate than the available open-source models at ULCA platform, or the Indic-trans platform. Linguistically rich annotated data for the 3 languages: 40k sentences per language, which will be annotated as per the interlingua annotation scheme with the help of the available morphology tools. The data will be released under CC-BY 4.0 license and can be used for any purpose by all on ULCA. 3 Years **Duration of Project:** 8. 9. Milestones: Months 1-6 Collecting raw and parallel data Months 7-12 Design of annotation schema for the interlingua with a usable API Morpho-syntactic annotation as per interlingua schema with the help of morphological tools: 2k sentences per language Months 13-18 Morpho-syntactic annotation as per interlingua schema with the help of morphological tools: 13k sentences per language Deep Learning components for all the subsystems across all language verticals Months 19-24 Morpho-syntactic annotation as per interlingua schema with the help of morphological tools: 25k sentences per language Interlingua Interpreter: Automated feature generation and feature selection Interlingua Interpreter: Scoring mechanism for feature subspaces from the feature selection framework Automated extension of universal interlingua representation to target language-specific representation

#### Months 25-30

Building the interlingua-based translation model using the subsystems for improved interpretability and faithfulness: API and Web-interface

Benchmarking the interlingua guided text to text translation systems across baseline systems available on ULCA; profiling its various components

#### Months 31-36

Human benchmarking of explainability / linguistic correctness of interlingua as a post-hoc explainer

Finalizing and open-sourcing the modules and datasets

Dissemination

10.	Agency with which link up is established/proposed:	Language Curry www.languagecurry.com (Expression of Intent Letter)
		Reverie Language Technologies Ltd.: https://reverieinc.com/ (Expression of Intent Letter)
14.	Likely End User(s):	Useful as an API based service for startups, as a web service for end users, as a pedagogical system for language learning. Expression of interest from Language curry and Reverie Inc  The findings of the project will also be usable more widely by the research community.

12. Total Budget outlay (year wise): Rs. 3,43,76,700/- (Rupees three crore forty-three lakh seventy-six thousand seven hundred only)

Rs.In Lakhs SI. Head Year 1 Year 2 Year 3 Total No. Equipment 1 6.3 6.3 2 Manpower 95.64 95.64 95.64 286.92 Consumable 3 1.5 1.5 1.5 4.5 Travel 4 1.6 2.5 2,5 6.6 Contingency 2.1 9.95 2.1 5.75 Others (Misc.) 1.5 1.5 4.5 1.5 Sub-Total (2 to 5) 6 102.34 106.89 312.47 103.24 Overheads (at 8% of 7 8.187 8.259 8.551 24.997 6) 8 Grand Total (1+6+7) 116.827 111.499 115.441 343.767

## Institute Wise Budget Outlay:

## IIT, Kharagpur

Rs.In Lakhs

SI. No.	Head	Year 1	Year 2	Year 3	Total
1	<u>Equipment</u>	0.65	0	0	0.65
2	Manpower	20.04	20.04	20.04	60.12
3	Consumable	0.25	0.25	0.25	0.75
4	Travel	0.35	0.5	0.5	1.35
5	Contingency	0.35	0.35	4	4.7
	Others (Misc.)	0.25	0.25	0.25	0.75
5	Sub-Total (2 to 5)	21.24	21.39	25.04	67.67
7	Overheads (at 8% of 6)	1.699	1.711	2.003	5.413
3	Grand Total (1+6+7)	23.589	23.101	27.043	73.733

## IIT, Bombay

SI. No.	Head	Year 1	Year 2	Year 3	Rs.In Lakh: Total
1	Equipment	0.65	0		
2	Manpower	15.84	15.84	15.84	0.65
3	Consumable	0.25	0.25	0.25	47.52
4	Travel	0.25	0.4		0.75
5	Contingency	0.35		0.4	1.05
	Others (Misc.)	0.25	0.35	0.35	1.05
6	Sub-Total (2 to 5)	16.94	0.25	0.25	0.75
7	Overheads (at 8% of	10,54	17.09	17.09	51.12
3	6)	1.3552	1.3672	1.3672	4.0896
	Grand Total (1+6+7)	18.9452	18.4572	18.4572	55.8596

## IIT, Kanpur

Rs.In Lakhs

SI. No.	Head	Year 1	Year 2	Year 3	Total
1	Equipment	0.65	0	0	0.65
2	Manpower	15.84	15.84	15.84	47.52
3	Consumable	0.25	0.25	0.25	0.75
4	Travel	0.25	0.4	0.4	1.05
5	Contingency	0.35	0.35	0.35	1.05
	Others (Misc.)	0.25	0.25	0.25	0.75
6	Sub-Total (2 to 5)	16.94	17.09	17.09	51.12
7	Overheads (at 8% of 6)	1.3552	1.3672	1.3672	4.0896
8	Grand Total (1+6+7)	18.9452	18.4572	18.4572	55.8596

## IISc, Bangalore

SI. No.	Head	Year 1	Year 2	Year 3	Rs.In Lakhs Total
1	Equipment	0.65	0	0	0.65
2	Manpower	15.84	15.84	15.84	47.52
3	Consumable	0.25	0.25	0.25	0.75
4	Travel	0.25	0.4	0.4	1.05
5	Contingency	0.35	0.35	0.35	1.05
	Others (Misc.)	0.25	0.25	0.25	0.75
6	Sub-Total (2 to 5)	16.94	17.09	17.09	51.12
7	Overheads (at 8% of 6)	1.3552	1.3672	1.3672	4.0896
8	Grand Total (1+6+7)	18.9452	18.4572	18.4572	55.8596

## KSU, Bangalore

Rs.In Lakhs

SI. No.	Head	Year 1	Year 2	Year 3	Total
1	Equipment	2.5	0	0	2.5
2	Manpower	15.84	15.84	15.84	47.52
3	Consumable	0.25	0.25	0.25	0.75
4	Travel	0.25	0.4	0.4	1.05
5	Contingency	0.35	0.35	0.35	1.05
	Others (Misc.)	0.25	0.25	0.25	0.75
6	Sub-Total (2 to 5)	16.94	17.09	17.09	51.12
7	Overheads (at 8% of 6)	1.3552	1.3672	1.3672	4.0896
8	Grand Total (1+6+7)	20.7952	18.4572	18.4572	57.7096



## C-DAC, Bangalore

Rs.In Lakhs

SI. No.	Head	Year 1	Year 2	Year 3	Total
1	Equipment	1.2	0	0 ·	1.2
2	Manpower	12.24	12.24	12.24	36.72
3	Consumable	0.25	0.25	0.25	0.75
4	Travel	0.25	0.4	0.4	1.05
5	Contingency	0.35	0.35	0.35	1.05
	Others (Misc.)	0.25	0.25	0.25	0.75
6	Sub-Total (2 to 5)	13.34	13.49	13.49	40.32
7	Overheads (at 8% of 6)	1.0672	1.0792	1.0792	3.2256
8	Grand Total (1+6+7)	15.6072	14.5692	14.5692	44.7456

## 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:

Deep learning systems have been quite successful recently in speech/text translations among the languages of west Europe. They, however, require a large amount of parallel data for every pair of source and target languages posing a serious drawback for application in Indian languages. This project, thus, aims to address this by incorporating an interlingua framework based on grammatical tradition of Sanskrit in order to reduce the data requirement and also to get interpretability and faithfulness to produce a hybrid pipelined translation system for 3 Indian languages,

harnessing the representational power of deep learning and insights from Sanskrit grammar.

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

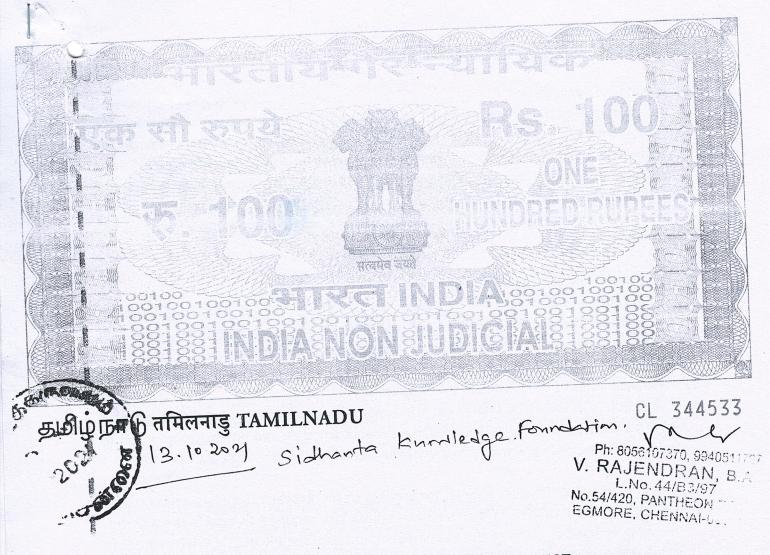
harnessing the representational power of deep learning and insights from Sanskrit grammar.

16. Stages for Release of Payment:

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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



# AGREEMENT FOR SHASTRA-MAPPING PROJECT

THIS AGREEMENT HAS BEEN ENTERED INTO BY:

Siddhanta Knowledge Foundation, a Section 8 Company registered under the Companies Act 1956, having its office at 72, Marshalls Road, Egmore, Chennai – 600008, India, represented by its Director, Mr.G Vishnu Vardhan, hereinafter referred to as "PROJECT OWNER".

WITH

The Department of VyAkarana, Karnataka Samskrit University, Pampa Mahakavi Road, Chamarajpet, Bengaluru – 560018, represented by its Head of the Department, Professor Ms.Shivani V, hereinafter referred to as "EXECUTION PARTNER".

Dr. SHIVANI.V

Drofessor and Head

Professor a

For SIDDHANTA KNOWLEDGE FOUNDATION

GO. MS.

Director

## The following has been agreed by the parties:

## A) Purpose of Agreement

The purpose of this Agreement is to establish the terms and conditions for the implementation of the project to produce a detailed 'ShAstra-mapping' of the Yogasutram and the MahAbhashyam texts, thereby enabling development of easy, effective and logical learning resources for these texts. This Agreement specifies the implementation framework for the project including timeline, responsibilities of the parties, allocation and disbursement of funds and other operational aspects of the project.

## B) Project timeline & extension of duration

The duration of this project will be for a period of 12 months from the date of signing of this Agreement. Any extension of the duration of the project and the terms and conditions thereof, will be based on mutual discussion and consent.

## C) Responsibilities of the parties to this Agreement

The EXECUTION PARTNER shall select and appoint Research Scholars to enable mapping of the aforementioned texts and design a suitable schedule and process mechanism to achieve the desired objectives / output(s) as agreed upon with the PROJECT OWNER.

The PROJECT OWNER shall arrange for training of the Research Scholars appointed by the EXECUTION PARTNER in the specific methodology required to enable the *ShAstra*-mapping of selected parts of the aforementioned texts. The PROJECT OWNER agrees to allocate required funds and resources for implementation of the project as agreed with the EXECUTION PARTNER, as specified in Clauses D and E. Also, the PROJECT OWNER shall coordinate with the EXECUTION PARTNER to ensure timely completion of the project and achievement of the stated objectives.

## D) Budget for the project: funds allocation and disbursement

The total amount of INR 4,80,000 (Rupees Four Lakhs Eighty thousand only) is inclusive of all expenses and costs specified in this Agreement, other than the amount mentioned in clause E, as budgeted and allocated by the PROJECT OWNER, till the completion of the said project, for the period of 12 months as mentioned in Clause B. Disbursement of amount to the EXECUTION PARTNER towards this project will be made by the PROJECT OWNER on a quarterly basis in advance on the 7<sup>th</sup> of the quarter beginning. If the 7<sup>th</sup> is a holiday, disbursement will be made on the next available working day. Disbursement of payment for the first quarter will be made within 7 working days from the date of signing of this Agreement.

Dr. SHIVANI.V

Protessor and Head

Dept of Vvakarana Shasira Faculty

Karnataka Samskrit University,

KBENGALURU - 560 004.

Director

K.S. SHANMUGAM

CITY OF CHENNAI

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For SIDDHANTA KNOWLEDGE FOUNDATION

## E) Resources for the Project

The PROJECT OWNER shall make the following resources available to the EXECUTION PARTNER for the said project purposes.

- Laptop 2 nos
- Rs.10,000/- for purchase of books etc as may be required and mutually agreed.
- Reimbursement of Project related expenses, such as consultancy fee & related travel expenses for Reputed Scholars / Subject Matter Experts upto a maximum of Rs.72,000/- over a period of 12 months. Disbursement of this amount will be made on quarterly basis (Rs.18,000/- per quarter) in advance of the quarter beginning. Disbursement of payment for the 1<sup>st</sup> quarter will be made within 7 working days from the date of signing of this agreement. Subsequent quarterly payments will be made on receipt of the actual expenditure details of the previous quarter.

After completion of the said project, the laptops provided can be transitioned to the next set of project(s) commissioned by the PROJECT OWNER in collaboration with the EXECUTION PARTNER. Subject to active collaboration with the PROJECT OWNER on projects for a minimum period of 3 years, the laptops may be retained by the University for further use.

#### F) Review process

The PROJECT OWNER and the EXECUTION PARTNER shall jointly put into place a periodical review process to ensure timely achievement of the stated objectives of the project. Such reviews may be conducted as per a mutually accepted schedule and in addition, in the event of any troubleshooting or specific requirement(s) or request(s) put forth by any of the parties.

## G) Confidentiality and non-disclosure

- Shastra-mapping training materials and resources shared by the PROJECT OWNER including audio and video recordings, must not be stored, copied or transmitted by the EXECUTION PARTNER without the explicit permission of the PROJECT OWNER.
- ii. All materials produced as part of this project by the EXECUTION PARTNER can be accessed and used by both the parties without any further commitments between the parties.

#### H) Managing resource personnel

 Appointment, management and termination of contracts with Research Scholars will be the exclusive domain of the EXECUTION PARTNER.

Dr. Coressor and Head Faculty of Visikarara Shadra Faculty (Per of Visikarara Shadra Faculty (Per of Visikarara Samskrit University), Karrataka Samskrit University, BENGALURU - 560 004

Director

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For SIDDHANTA KNOWLEDGE FOUNDATION

In case of termination of contract with any Research Scholar(s) or replacement(s) ii. made, the EXECUTION PARTNER will notify the PROJECT OWNER of such developments. The EXECUTION PARTNER will also sign a non-disclosure agreement with such outgoing Research Scholar(s) with regard to materials produced as part of this project and training materials that may have been shared by the PROJECT OWNER, including audio and video recordings. Such materials cannot be stored, copied or transmitted by the outgoing Research Scholar(s) without the explicit permission of the EXECUTION PARTNER and the PROJECT OWNER, respectively.

## I) Termination of Agreement

- i. This Agreement can be terminated by any of the parties by giving a notice of 2 months to the other parties. All materials produced as part of this project upto the point of termination of Agreement will be made available to the PROJECT OWNER by the EXECUTION PARTNER and can be accessed and used by both the parties without any further commitments between the parties.
- ii. No other claims of any nature will be entertained by any of the parties subsequent to termination of this Agreement.

SIGNED FOR AND ON BEHALF OF THE PARTIES:

Department of Vyakarana, Karnataka Samskrit University

professor and Head of Vvalarana Shpetra Focult Karratora Samsini University Siddhanta Knowledge Foundation

For SIDDHANTA KNOWLEDGE FOUNDATION

Director

Name: Dr. V. Shuvan

Date: 15/11/2021
Place: Bengulm

Name: G VISHNU VARDHAN

Date : 10th NOVEMBER 2021

Place: CHENNAI

ATTESTED BY Notary:

Notary:

Y OF CHENNA

ADVOCATE & NOTARY PUBLIC EGMORE COURT

ADVOCATE ASSOCIATION EGMORE, CHENNAI-600 008. Cell: 98413 59235

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