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Agreement between Indian Institute of Technology (Indian School of Mines), Dhanbad, called "IIT(ISM)"

and

L&T Kansbahal Product BU, called "L&T"

For the execution of

R&D project "**Investigations into the Planning and Design Aspects Governing the Selective Coal Cutting Technology using Surface Miner for Various Rock Conditions for Clean Coal Production, called "the Project"**

1) An R&D project titled "**Investigations into the Planning and Design Aspects Governing the Selective Coal Cutting Technology using Surface Miner for Various Rock Conditions for Clean Coal Production**" has been awarded under CCORD 2017 Grant by the DST, Ministry of Science & Technology, Government of India vide letter No. TMD/CERI/CleanCoal/2017/07(G) dt. 14.06.2019 and the subsequent communication vide letter No. TMD/CERI/CleanCoal/2017/07(c) dt. 14.06.2019. This is a time bound collaborative project to be implemented by IIT (ISM), Dhanbad as the principal implementing agency and L&T Kansbahal Product BU as its technology partner as per the project proposal.
2) Under the above-mentioned Project, one proto-type cutting drum experimental setup (Rotary Cutting Rig-RCR) will be developed at IIT(ISM) Dhanbad to study various drum design parameters pertaining to surface miner drum for different rock cutting applications. This will be supported by suitable numerical and cutting simulation models utilising relevant software to verify the experimental results and come out with a drum design methodology for surface miner. Apart from this, suitable mine planning strategy shall be developed for the deployment of surface miner for excavation of coal and waste embedded within coal seams (shale, sandstone and other inert bands) using integrated mine planning software for clean coal mining.
3) L&T is involved in the project right from the project proposal stage as Technology Partner considering the long association of IIT(ISM) with L&T in various surface miner related projects as well as their vast experience in design, manufacturing and operation of surface miners. IIT (ISM) and L&T will undertake different activities as mentioned in the project proposal. Under this proposal one proto-type and one actual field scale drum shall be manufactured by L&T. Scope of L&T's contribution in the project as per the project proposal and also the kick-off meeting held on 29.7.2019 is given below:

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Table 1: The scope of L&T contribution in terms of financial and logistic support

Sl. No.	Project components	Total (Rs. Lac)
1	Design and Manufacturing cost of mechanical parts of RCR including one cutting drum for RCR (frame / mechanics)	34.00
2	Involved in joint field studies/tests with necessary Travel and other expenses	
3	Facilitate studies/tests on L&T surface miners in hard rock cutting in different mines and provide design and performance data.	

L&T will also undertake fabrication and supply of the key components as mentioned in Table 2 against purchase order from IIT (ISM) Dhanbad to L&T, which form the part of the project proposal and also the kickoff meeting held in DST (minutes attached).

Table 2: Fabrication and supply of key components of the project on cost basis against purchase order from IIT (ISM) Dhanbad to L&T

Sl. No.	Project components	Total (Rs. Lac)
1	Electricals and controls (setup with accessories) for Test Rig (RCR)	10.64
2	Hydraulic system (setup with accessories) for Test Rig (RCR)	19.60
3	One full scale drum for field trials	48.00
Gross total on cost basis (inclusive of applicable GST through a PO)		78.24

4) Two mine locations will be identified from subsidiaries of CIL (MCL/SECL/others as applicable) in consultation with L&T who have agreed to provide required support from field sites. While fixing these mines, seams containing hard stone bands/OB and other dirt bands shall be kept in view for their selective cutting and disposal to aid clean coal mining.

5) The key deliverables would be a new product by the way of designing an efficient cutting drum for surface miner in different geological conditions. Mine Planning and Excavation Methodology integrating the coal /inter-bedded waste rock excavation, with suitable waste disposal planning for clean coal production.

6) Cutting drum design methodology, study findings data, calculations, simulations, analysis and related knowhow will be shared with L&T in suitable form as applicable. L&T will be free to use such knowhow for future development and commercialization purpose on mutually agreed terms once the full-scale drum design is tested successfully in conditions as mentioned in clause 2 & 4. However, there will be no revenue sharing on subsequent future developments of the knowhow by L&T.
7) IIT (ISM) however will be joint-owner of knowhow and it's use will be limited to teaching, research & development, Ph.D. and publications without disclosing it to competitors of L&T.
8) The designed drum when commercialised will be carrying the names and Logos of both IIT(ISM) & L&T respectively as a part of branding.
9) This agreement will commence on the date the last of the parties to do so signs this agreement and will expire when testing of actual drum is completed and design is validated by IIT (ISM) and L&T together.
10) DST grant will be released to IIT (ISM) as being the principal implementing agency. The amount as mentioned in Table 2 will be released to L&T on PO basis, the technology partner as per the project proposal for each of the activities mentioned.
11) L&T confirms that they will manufacture & supply the key components (as per Table-2) on cost-to-cost basis without making profit from this project fund.
12) Nothing contained in this agreement shall affect the ownership of the parties' Background IP made available to the other party for the purpose of carrying out its obligations under this agreement.
13) The Intellectual Property Rights (New IPR) of the surface miner drum design jointly developed under this Project would belong to IIT(ISM) and L&T jointly. IIT (ISM) shall retain the right for using the IP for teaching, research & development, Ph.D. and publications purpose without infringing the non-disclosure as mentioned at Point 7 ".
14) The principal implementing agency may apply for a patent on behalf of IIT(ISM) & L&T of any process/product exclusively developed under this DST funded R&D Project by clearly mentioning the name of the R&D Project. The principal implementing agency should fully share the know-how with DST. While applying for any such patent, the principal implementing agency will ensure that none of the proprietary rights of L&T is infringed.

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15) Each party agrees to maintain the confidentiality of the Confidential Information of the other party. Any sharing of information should happen only with written approval from authorised representative of other party. The same shall not apply to the submission of reports partly or fully by the principal implementing agency to the Project sponsor (DST), other statutory or regulatory authorities. For the purpose of this agreement, 'Confidential Information' means all information, drawing/documents, trade secrets and knowledge of or disclosed by a party (**Discloser**) to another party (**Receiver**) that:

(a) is by its nature confidential;

(b) is designated or marked by the Discloser as confidential; or

(c) the Receiver knows or ought to know is confidential, but does not include information which:

(d) is or becomes public knowledge other than by breach of this deed or any other confidentiality obligation; or

(e) is independently developed by a party while having no knowledge of or access to the other party's Confidential Information; or

(f) where disclosure is required to be made in accordance with established governmental policies, procedures or for public accountability purposes.

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16) Any and all project deliverables by IIT (ISM) Dhanbad given to L & T under this Agreement shall be on as-is-where-is basis. IIT (ISM) Dhanbad does not make representations, conditions, or warranties, either express or implied, to L & T or any party deriving title from L&T that such deliverables or report under this project,

(a) corresponds to a particular description;

(b) is of merchantable quality;

(c) is fit for a particular purpose; or

(d) is durable for a reasonable period of time.

17) "This R&D Project shall be executed as per the following documents which are a part of this agreement for addressing any inconsistency:

(a) the Project Proposal;

(b) the Minutes of the Kick off meeting held on 29.07.2019 involving IIT(ISM), L&T and DST

(c) this agreement,

भारतीय खनि विद्यापीठ (Indian School of Mines) धनबाद Indian Institute of Technology (ISM) Dhanbad

the provisions will take precedence in that order to the extent necessary to resolve the inconsistency, unless otherwise noted in this agreement.

16) This agreement will be governed in accordance with the laws of Union of India whenever necessary. Each party submits to the exclusive jurisdiction of the courts of the concerned state.

This agreement is signed by: Prof. Shalivahan

Dean (R&D), IIT(ISM) on behalf of Indian Institute of Technology (Indian School of Mines), Dhanbad

Witnesses: 1. PI :Prof. V.M.S.R.Murthy

2. Co-PI :Prof.. L. A. Kumaraswamidhas

Place: Date: 14.07.2020

Signed for and on behalf of the L&T Kansbahal Product BU by

Raju Rai

Vice President & Head Product BU(KBL & EWL)

a person duly authorised to act in that behalf in the presence of:

LARSEN & TOUBRO LIMITED KANSBAHAL WORKS KANSBAHAL-770034 DIST SUNDARGARH (ORISSA)

Signature of Witness

HARISH CHANDRA POTDAR

Name of Witness in full

Signature

Dean (Research & Development) Indian Institute of Technology (Indian School of Mines) Dhanbad - 826004 (INDIA)

Date:

Annexure 1 **Project** Proposal

Annexure 2 **Kick off minutes**

Sanction Letter No. TMD/CERI/CleanCoal/2017/07(G) dt. 14.06.2019 and SanctionLetter No. TMD/CERI/CleanCoal/2017/07(c) dt. 14.06.2019