

Dated: 18.07.2018

**ADMINISTRATIVE APPROVAL**

**Subject: Project on "Next Generation AMOLED Displays, OLED Lighting and OPV Products: Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India" – Indian Institute of Technology, Madras.**

Sir/Madam,

I am directed to convey the administrative approval of the competent authority for the Project on "Next Generation AMOLED Displays, OLED Lighting and OPV Products: Development of Disruptive Technologies to enable cost effective electronic component manufacturing in India" to be implemented by Indian Institute of Technology, Madras at a total project outlay of Rs. 32,13,00,000/- (Rupees thirty two crore and thirteen lakh only) including a Grant-in-Aid of Rs. 25,18,00,000/- (Rupees twenty five crore and eighteen lakh only) from Ministry of Electronics & Information Technology (MeitY). The duration of the project is 2 years. The project is to be implemented by IIT, Madras in association with other stakeholders/participating agencies and their contribution is as follows:-

(Rupees in lakh)

S.No.	Name of the Stakeholders/participating agencies	Amount of contribution
1.	M/s Tata Sons Limited	340.00
2.	DRDO, Gol	340.00
3.	M/s Velankani Group	15.00

2. In addition to above, M/s. Grantwood Technologies Private Limited (GTPL) will also participate in the project as technology and joint development partner and will contribute about Rs. 5,60,00,000/- (Rs. Five crore sixty lakh only) in kind, in the following manner: -

(Rupees in lakh)

Head	Years		Total
	1 <sup>st</sup>	2 <sup>nd</sup>	
Grantwood India subsidiary, M/s. GTPL operating expenses (includes manpower charges and administrative charges for Indian office)	130	150	280
AMOLED Alliance Development & Management (includes travelling charges and manpower training charges)	150	130	280
<b>Grand Total</b>	<b>280</b>	<b>280</b>	<b>560</b>

3. The Grants-in-Aid of Rs. 25,18,00,000/- (Rupees twenty five crore and eighteen lakh only) from MeitY would be released to the Indian Institute of Technology, Madras. The terms and conditions and details of the project are given in the Annexure-1 along-with general terms & conditions governing the Grant-in Aid as Annexure-2.

Contd...

4. This issues with the concurrence of IFD, MeitY vide Dy. No. 484 dated 19.06.2018 and approval of the Secretary, MeitY vide Dy. No. 07 dated 12.7.2018.

Yours faithfully



(Rajesh Suri)  
Joint Director

Copy to:

1. Indian Institute of Technology, Madras.
2. PAO, MeitY
3. Principal Director of Audit, Scientific Department, New Delhi
4. AS(PK)/AS&FA/JS(SKR)/GC(AK)/OSD to Secretary/PTO(SK)
5. Other Stakeholders/Participating agencies (DRDO; M/s.Tata Son Ltd., M/s.GTPL and M/s. Valankini Group)
6. Sanction/Guard File



(Rajesh Suri)  
Joint Director

Annexure to administrative approval no. No. 1(3)/2016-EMCD dated 18.7.2018 regarding "Next Generation AMOLED Displays, OLED Lighting, and OPV Products- Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India"

Sl. No.	Subject	Particulars												
1	Name of Project	Next Generation AMOLED Displays, OLED Lighting, and OPV Products-Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India												
2.	Objectives	<p>Electronics component such as AMOLED display is emerging technology/component for electronic devices (such as Smart phones, tablets etc) which will be required to drive the vision of a digitally empowered society and a knowledge economy. The objective is to develop AMOLED displays by utilizing high speed deposition technique to achieve "economies of speed" which will be suitable for micro factories.</p> <p>The project will develop next-generation, state-of-the-art, high-volume electronic components based on organic devices as below:</p> <ul style="list-style-type: none"> <li>(i) Rigid or flexible Active-Matrix Organic Light-Emitting Diode (AMOLED) displays for mobile phone products such as smart phones and tablets</li> <li>(ii) Energy-efficient, rigid or flexible Organic Light-Emitting Diode (OLED) lighting panels for automotive applications and for lightweight, portable, general purpose task-lighting applications</li> <li>(iii) Lightweight and flexible Organic Photovoltaics (OPV) light-harvesting power sources for supplemental use in mobile phone products or for main use in IOT ("Internet of Things") products</li> </ul>												
3.	Outcome/ Deliverables	<p>This project will develop AMOLED displays for mobile products, OLED lighting panels, and lightweight OPV devices by utilizing high speed deposition technique to achieve "economies of speed" for micro-factories. The major priority of the project is development of AMOLED display while OLED lighting devices and OPV devices having technology synergies will also be developed. Specific outcomes (project deliverables) are:</p> <table border="1" data-bbox="539 1151 1394 1675"> <thead> <tr> <th>Prototype</th> <th>Specifications</th> <th>Number of prototypes</th> </tr> </thead> <tbody> <tr> <td>AMOLED Display (AMOLED Panel + Driving Board)</td> <td>5.1" diagonal 16:9 aspect ratio 1920 x 1080 pixels (2K Full HD 1080p, 2.1 Mpixels &gt;400 ppi resolution</td> <td>20</td> </tr> <tr> <td>OLED Lighting (+ Driving Board)</td> <td>100mm x 100mm panel 80lm/W CCT:4000K CRI&gt;85 LT70:20K hours</td> <td>10</td> </tr> <tr> <td>OPV Power Source for Mobile Phones (+ Charge Controller &amp; Rechargeable Battery)</td> <td>5% PCE &amp; 5 year lifetime OPV panel Integrated OPV wall-plug free power source for consumer products like smartphones</td> <td>20</td> </tr> </tbody> </table> <p>Other outcomes of the project are:</p> <ul style="list-style-type: none"> <li>• IP generation, Technical Reports and Journal Articles</li> <li>• Manpower Training : MS and PhD students will be utilising the facility and 10 students from Industry/Outside R&amp;D</li> </ul> <p>Successful completion of the project is expected to benefit production of AMOLED displays in India using micro factory concept.</p>	Prototype	Specifications	Number of prototypes	AMOLED Display (AMOLED Panel + Driving Board)	5.1" diagonal 16:9 aspect ratio 1920 x 1080 pixels (2K Full HD 1080p, 2.1 Mpixels >400 ppi resolution	20	OLED Lighting (+ Driving Board)	100mm x 100mm panel 80lm/W CCT:4000K CRI>85 LT70:20K hours	10	OPV Power Source for Mobile Phones (+ Charge Controller & Rechargeable Battery)	5% PCE & 5 year lifetime OPV panel Integrated OPV wall-plug free power source for consumer products like smartphones	20
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4.	IPR	IPR generated out of this project shall ordinarily be registered or reside in India. The licensing terms and conditions for IPR will be worked out in mutual agreement between MeitY and IIT-M.												

5	Implementing Agencies	Indian Institute of Technology (IIT) Madras, an autonomous organisation and it is recognised as an Institute of National Importance by the Government of India.																																
6	Chief Investigators	The project team comprising of people with expertise in field of OLED, OPV, OFET, detectors, sensors, IoT, embedded systems, dielectrics and encapsulation and is as follows:  a) <u>Dr. Debdutta Ray</u> , Assistant Professor Dr. Soumya Dutta, Assistant Professor Dr. G Rajeshwaran, Professor Dr. G Venkatesh, Professor  b) Department of Electrical Engineering IIT Madras, Sardar Patel Road, Chennai 600036																																
7	Duration of the project	24 months. The timelines/milestones would be incorporated in MoU to be executed between MeitY and IIT-Madras																																
8.	Stakeholders and participating agencies	1. TATA Sons Ltd, 2. DRDO, 3. M/s. Velankani Group 4.M/s. GTPL  (The roles and responsibilities of all the agencies will be enunciated in MoU to be executed between MeitY and IIT-Madras)																																
9	Project Outlay and fund contributions	Total Project Outlay is Rs. 32.13 crore The contribution of stakeholders is as follows:  MeitY : Rs. 25.18 crore M/s. Tata sons ltd. : Rs. 3.40 crore DRDO : Rs. 3.40 crore M/s. Valankini Group : Rs.15 lakh																																
10.	Project Monitoring	MeitY will constitute a Project Review and Steering Group (PRSG) to monitor, review and steer the implementation of project. IIT-M will submit quarterly progress reports to MeitY or as & when required by MeitY.																																
11.	Total Project fund component-wise break up & Outlay	<table border="1"> <thead> <tr> <th>Head</th> <th>1<sup>st</sup> Year</th> <th>2<sup>nd</sup> Year</th> <th>Total (Rs. In lakh)</th> </tr> </thead> <tbody> <tr> <td>Capital Equipment (FE Component)</td> <td>2505 2030</td> <td>45 0</td> <td>2550 2030</td> </tr> <tr> <td>Consumable (FE Component)</td> <td>221 190</td> <td>264 230</td> <td>485 420</td> </tr> <tr> <td>Manpower</td> <td>67</td> <td>69</td> <td>136</td> </tr> <tr> <td>Travel and Training (Domestic Travel)</td> <td>5</td> <td>5</td> <td>10</td> </tr> <tr> <td>Contingencies *including TA/DA for holding PRSG meetings</td> <td>10</td> <td>10</td> <td>20</td> </tr> <tr> <td>Overheads, if any</td> <td>10</td> <td>2</td> <td>12</td> </tr> <tr> <td>Grand Total (FE Component)</td> <td><b>2818</b> 2220</td> <td><b>395</b> 230</td> <td><b>3213</b> 2450</td> </tr> </tbody> </table> <p><i>If any saving are made on FE components, the same should accrue to MeitY, Govt. of India</i></p>	Head	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total (Rs. In lakh)	Capital Equipment (FE Component)	2505 2030	45 0	2550 2030	Consumable (FE Component)	221 190	264 230	485 420	Manpower	67	69	136	Travel and Training (Domestic Travel)	5	5	10	Contingencies *including TA/DA for holding PRSG meetings	10	10	20	Overheads, if any	10	2	12	Grand Total (FE Component)	<b>2818</b> 2220	<b>395</b> 230	<b>3213</b> 2450
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		Grand Total (FE Component)	2332 1878	186 138	2518 2016
13.	Tata Sons Ltd.'s component-wise break up of funds	(Rs. In lakh)			
		Head	Year		Total
			1 <sup>st</sup>	2nd	
		Capital equipment	125	45	170
		FE component	80	0	80
		Consumable Stores	46	46	92
		FE Component	46	46	92
		Manpower	32	34	68
		Travel and training	7	5	10
		Contingencies	0	0	0
		Overheads	0	0	0
		<b>Grand Total</b>	<b>210</b>	<b>130</b>	<b>340</b>
		FE Component	126	46	172
14.	DRDO's component-wise break up of funds	(Rs. In lakh)			
		Head	Year		Total
			1 <sup>st</sup>	2nd	
		Capital equipment	170	0	170
		FE component	170	0	170
		Consumable Stores	46	46	92
		FE Component	46	46	92
		Manpower	32	32	64
		Travel and training	7	7	14
		Contingencies	0	0	0
		Overheads	0	0	0
		<b>Grand Total</b>	<b>255</b>	<b>85</b>	<b>340</b>
		FE Component	216	46	262
15.	Vakenkini Group's component-wise break up of funds	(Rs. In lakh)			
		Head	Year		Total
			1 <sup>st</sup>	2nd	
		Capital equipment	0	0	0
		FE component	0	0	0
		Consumable Stores	0	0	0
		FE Component	0	0	0
		Manpower	0	0	0
		Travel and training	0	0	0
		Contingencies	15	0	15
		Overheads	0	0	0

			<b>Grand Total</b>	<b>15</b>	<b>0</b>	<b>15</b>																		
			FE Component	0	0	0																		
16.	M/s.GTPL's component-wise break up of funds  (contribution in kind)		<table border="1"> <thead> <tr> <th rowspan="2">Head</th> <th colspan="2">Years</th> <th rowspan="2">Total (Rs. In lakh)</th> </tr> <tr> <th>1<sup>st</sup></th> <th>2nd</th> </tr> </thead> <tbody> <tr> <td>Grantwood India subsidiary operating expenses (includes manpower charges and administrative charges for Indian office)</td> <td>130</td> <td>150</td> <td>280</td> </tr> <tr> <td>AMOLED Alliance Development &amp; Management (includes travelling charges and manpower training charges)</td> <td>150</td> <td>130</td> <td>280</td> </tr> <tr> <td><b>Grand Total</b></td> <td><b>280</b></td> <td><b>280</b></td> <td><b>560</b></td> </tr> </tbody> </table>	Head	Years		Total (Rs. In lakh)	1 <sup>st</sup>	2nd	Grantwood India subsidiary operating expenses (includes manpower charges and administrative charges for Indian office)	130	150	280	AMOLED Alliance Development & Management (includes travelling charges and manpower training charges)	150	130	280	<b>Grand Total</b>	<b>280</b>	<b>280</b>	<b>560</b>			
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17	Release of funds from MeitY	(i) 1 <sup>st</sup> instalment of Rs. 23,32,00,000/-(Rs. Twenty Three crore thirty two lakh only) to be released to IIT-Madras after acceptance of administrative approval and execution of MoU between MeitY and IIT-M.  (ii) 2 <sup>nd</sup> instalment of Rs. 1.86 crore would be released on submission of UCs and progress report, on the recommendation of PRSG.																						



(Rajesh Suri)  
Joint Director

Tel: 011-24301922

[rajesh.suri@meity.gov.in](mailto:rajesh.suri@meity.gov.in)

Department of Information Technology  
Ministry of Communication & IT  
Government of India  
Terms and Conditions Governing the Grant-in-aid

- i) The grant is for the specific project as approved by DIT and shall be subject to the following conditions:
  - (a) The grant amount shall be spent for the project within the specified time.
  - (b) Any portion of the grant which is not ultimately required for expenditure for the approved purposes shall be duly surrendered to DIT.
- ii) The grantee institution shall maintain an audited record in the form of a register in the prescribed proforma for permanent, semi-permanent assets acquired solely or mainly out of DIT grant;
- iii) The assets referred to in (ii) above will be property of DIT and should not, without prior sanction of DIT, be disposed off or encumbered or utilised for the purposes other than those for which the grant has been sanctioned. An undertaking shall be given by the grantee institution that they agree to be governed by these conditions;
- iv) At the conclusion of the project, DIT will be free to sell or otherwise dispose of the assets which are the property of DIT and grantee institution shall render to DIT the necessary support for facilitating the sale of these assets;
- v) The grantee institution shall send to the Department of Information Technology at the end of each financial year as well as at the time of seeking further instalments of the grant a list of assets referred to in (ii) above;
- vi) Should at any time grantee institution cease to exist, such assets etc., shall revert to DIT;
- vii) 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.
- viii) The grantee institution shall render an audited statement of accounts to DIT.
- ix) 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 Department of Information Technology within six months following the end of the relevant financial year;
- x) 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;
- xi) DIT 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;
- xii) 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 this Department. The interest so earned will be treated as a credit to the grantee to be adjusted towards future instalment of the grant;
- xiii) Sale proceeds of components, prototype, pilot project etc. fabricated as a result of the development of the project arising directly from funds granted by Department of Information Technology, shall be remitted to DIT;

xiv) The know-how generated by the project, shall be property of DIT. Any receipt by way of sale of know-how transfer, royalties training etc., shall accrue to DIT. DIT may, in its discretion, allow or direct a portion of such receipts to be retained by the grantee organisation.

xv) DIT will have the right to call for drawings, specifications and other data necessary to enable the transfer of know-how to other parties and the grantee shall supply all the needed data at the request of DIT;

xvi) Application by grantee institution for any other financial assistance or receipt of grant/loan from any other Agency/Ministry/Department for this project should have the prior approval of Department of Information Technology.

xvii) The Grantee institution is not allowed to entrust the implementation of this project for which grant-in-aid is received to another institution and to divert the grant-in-aid received from Ministry of Information Technology as assistance to the later institution.

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

xix) The Grantee institution will first make all efforts to protect intellectual property generated out of the project. The grantee institution will examine Intellectual Property Rights (IPR) protection issues in consultation with IPR Cell, DIT to file patents, register the copyrights etc. before making it public by publishing in the technical journals and books, presenting findings in Conferences etc.

xx) The Intellectual property and the rights associated with it shall be assigned to DIT. In cases where the fundings have been done jointly with other organisations, the IP rights would be appropriately shared.

xxi) In case of any dispute on any matter, related to the project during the course of its implementation, the decision of Secretary, DIT, shall be final and binding on the institute.

**A certificate of acceptance of terms and conditions as above needs to be given by the chief investigator/ endorsed by the head of the institute while submitting the project proposal.**