



OPEN SOLICITATION

FOR PROPOSALS TO ENHANCE DISPLAY
MANUFACTURING CAPABILITY

Request for Proposals: November 27, 2006

Pre-proposals Due: January 15, 2007

USDC Mission/Objectives

The United States Display Consortium (USDC) is an industry-led, public/private partnership providing a common platform for FPD manufacturers/developers and their supplier base to develop the next generation of manufacturing equipment and materials. The USDC's mission is to develop and organize the U.S. manufacturing expertise to expand the infrastructure required to support world-class manufacturing capability for electronic displays. The USDC will oversee and administer funds provided by the U.S. Government through the Army Research Laboratory (ARL) for this purpose.

The specific mission includes development of the manufacturing equipment, materials, components, and processes required for more cost-effective fabrication of current and next generation display products. A special emphasis is on the developments necessary to enable displays to be fabricated on flexible substrates as part of the Army's Flexible Display Initiative. An emphasis is also being placed on developments directed at enabling web-based (roll-to-roll) manufacturing of displays and other electronic components and packages.

Projects selected on flexible display materials, process technology and batch processing tools will be integrated into the work plan for the Army R&D Center for Flexible Displays, located at the Arizona State University, as a part of the 5-year Army Flexible Display Initiative. Projects related to development of roll-to-roll manufacturing tools will be evaluated and integrated into the prototype production facility of the Center for Advanced Microelectronics Manufacturing [CAMM], which is directed by the State University of New York at Binghamton, and located in the facilities of Endicott Interconnect Technologies.

Proposal Process

To achieve the objectives on supplier quality and insertion into manufacturing, USDC is actively seeking proposals for the design, development and delivery of new or substantially improved process technology and manufacturing equipment, materials and components supply used in the fabrication of electronic displays.

This is an open solicitation, such that detailed objectives and end point specifications/requirements for a specific manufacturing process or material have not been predefined.

You may submit a proposal on any topic related to enhancement in capability and/or cost for display manufacturing as cited above. The section labeled "Priority Proposal Topics" provides a list of topics for which USDC member companies have expressed interest. This list is not all inclusive, but is meant as a guide on topics viewed as priority needs for the industry by the USDC Technical Council members.

The USDC program is conducted in two stages: pre-proposal and final proposal. The initial response to this RFP may be a brief pre-proposal (less than 5 pages). It should highlight the proposed project scope, objectives, technical approach, risk, benefits to the industry, and expected deliverables. An estimate of the project cost and schedule should also be provided. No information considered to be

company proprietary should be divulged. However, a company may submit a complete final proposal for more immediate consideration of award at this time, if so desired.

The members of the USDC Technical Council will review the pre-proposals (or complete proposals) and down-select to those that create the greatest interest in terms of meeting a critical industry need, as perceived by the USDC members, and which demonstrate a viable solution. The selected companies will be notified and invited to submit a complete proposal, if this approach was not taken in the initial submission, by following the guidelines enumerated in latter sections of this document.

Following completion of the evaluation and prioritization of the complete proposals by the USDC technical teams, and consistent with the available budget for 2007 new project starts, those identified as worthy of support will be recommended to the USDC Governing Board for approval of funding.

In soliciting these proposals, USDC plans to grant and administer funding which, in most cases, must be matched (50% minimum) with funds in the form of cash and in-kind contributions provided by the grant recipients to cover the total project cost. Project Teams of skilled technical resources from the USDC consortium member companies will be identified to provide project oversight and direction, as well as support for the process integration and evaluation at one or more of the consortium members' manufacturing facilities, the Army Flexible Displays Center at ASU, or the CAMM at Binghamton University. These Project Teams typically will be comprised of 2 to 4 experts from the consortium companies and members from the successful individual supplier or supplier team.

In responding to this solicitation, partnering among industrial companies or industrial company/ R&D organization/university teams is appropriate and in some cases encouraged. Individual company responses are likewise appropriate where company size, breadth and expertise are adequate to cover effectively all areas (e.g., technical resources, financial stability, and market presence) critical to the successful delivery of the equipment or material proposed.

USDC will support technical approaches that are revolutionary, thus having a more significant element of risk, as well as approaches that are evolutionary improvements upon existing capability, which tend to be less risky and involve shorter development and delivery intervals. It is recognized that it may be desirable to include information which is considered confidential and proprietary by the submitter in order to fully and effectively convey the technical merits of the proposal. While a best effort will be made to restrict the proposal information to those with a need to know expressly for purposes of the review, it is recommended that the inclusion of proprietary information be limited to the minimum necessary to convey the highlights of the technical approach.

With respect to intellectual property developed under a USDC contract, the following policy has been established to encourage equipment and materials suppliers to cooperate with USDC in the accomplishment of its objectives:

Legal title to any technology developed under a USDC funded research and development contract will be the property of the development contractor. Agreements will stipulate, however, that the development contractor must provide each member of the USDC an opportunity to procure any materials, equipment or processes developed with such technology on a right-of-first-acceptance basis for the first year of commercial availability.

Contracts generally will be awarded as fixed payment, not-to exceed contracts, with payments to be made on achievement of milestones, as presented in the proposal. If your company has a U.S. government approved rate structure, use it. If not, the normal commercial cost accounting system used for internal R&D projects will be acceptable. The methods used to value "cost sharing" cost must be the same as those used to value the full project costs. All suppliers are expected to have a government approved or industry standard accounting system by which actual project costs are tracked and reported. This is an absolute requirement to be sure that cost share obligations are met.

If a full proposal is requested, a work breakdown structure should be the basis of project schedules, milestone definitions, and cost estimates. Cost estimates for each major step leading to completion of a milestone should be used as the basis for the amount from the grant to be paid at each milestone. A spreadsheet showing these calculations should accompany each proposal. The same spreadsheet should also show the specifics of how you will contribute your matching share of the total costs of the development contract. Cost sharing expectations have been established in the master agreement between USDC and ARL, and the target has been set at achieving a 50/50 cost sharing ratio between government and industry.

Priority Proposal Topics

Pre-proposals and complete proposals will be accepted on all topics related to equipment, process technology and materials for electronic display manufacturing. As a guide, a selection of topics for which specific interest has been expressed by the USDC Technical Council members is listed below. Please note, however, that responses do not need to be restricted to topics on this list.

Non-contact cleaning processes and tools for flexible electronics	Array testing of OLED backplanes
Novel materials and mfg processes for TFT fabrications	Unique display metrology technologies
Patterned conductor repair	Flexible transparent conductive films
Low-T/High K gate dielectric materials & process	Transparent electrode materials
Organic electronics manufacturing infrastructure	Novel OLED packaging
Novel organic semiconductor materials and manufacturing processes	High Tg optical quality polymers
Web-based defect inspection tool & process	Edge adhesives/sealants for flexible displays
Projection display: LCOS inorganic alignment layers, optical films	Improved materials & process for chips on flex
Temporary bonding adhesives for flex substrate bonding to rigid [glass] carrier plates	Objective metrics to characterize display viewability performance
Printed Electronics	Organic electronics materials and processes
Manufacturing cost reduction opportunities	Planarization technologies

Requirements for Submitting a Proposal

In order to submit a response to this USDC request and subsequently to be considered for a grant, several requirements must be met as detailed below.

To receive an award from USDC, the company or composite team of companies must have a significant presence in the U.S. in the form of R&D activities and/or manufacturing. At least 50% of the work activity (funds) must be spent within the United States operations. In certain cases, where it can be demonstrated that the development is both critical to U.S. manufacturing capability and unique, this “preference for U.S. operations” requirement can be waived with ARL approval.

The company or companies must be committed to volume manufacturing of the developed equipment or materials and provision to the U.S. display manufacturing industry on a right-of-first acceptance basis. Applied research conducted by universities will be considered and does not need to meet this requirement. However, in this latter case a pathway to commercialization must be envisioned and described.

To submit a complete proposal and to receive a grant from USDC, the company or companies must be supporting members of the display industry and USDC through a USDC Sustaining Membership or as a member of one of the USDC User Groups. This requirement does not need to be met in order to submit the pre-proposal. However, if the pre-proposal generates interest and the submitter chooses, upon USDC request, to prepare and submit a complete proposal, then the requirement for membership must be met before the proposal can be evaluated and given consideration for funding.

The company or companies, including universities, must provide a matching share of the development cost in cash and in-kind contributions (e.g., labor and materials).

Pre-Proposal Instructions

A pre-proposal does not need to follow a rigid specified format. It is typically less than 5 pages although there is no page limit. In general, it should include the following items:

- project leader and contact information on the first page of your pre-proposal
- total project cost and cost share on the first page of your pre-proposal
- a description of the objective and set of target specifications
- a description of the technical approach and supporting data and diagrams
- description of the identified industry need that is being satisfied and competitive alternatives that are currently being used, if applicable
- project risk
- schedule

Pre-Proposals will only be accepted electronically up to 5 PM Pacific time on the due date. Please submit your questions and completed pre-proposal to:

Brett Bryars
USDC - Director of Technical Programs
bbryars@usdc.org

Full Proposal Instructions

If your pre-proposal is selected by the USDC Technical Council for further consideration, you will be asked to submit a full proposal with more detailed project information. To have your proposal reviewed by the USDC Tech Council, you must become a USDC Sustaining Member or User Group Member (if not already a member).

A rigid format is not required for completing a full proposal, but there are certain topics which should be discussed. The suggested format below will help us evaluate your proposal and ensure that the major topic areas are covered. A full proposal is typically less than 20 pages, however there is no page limit.

Objective (1 page)

- project leader and contact information on the first page of your pre-proposal
- a short description of the project
- total project cost, cost share, and duration

Technical Approach

- a description of the objective and set of target specifications
- a description of the technical approach and supporting data and diagrams
- description of the identified industry need that is being satisfied and competitive alternatives that are currently being used, if applicable

Project Risks

- an identification of the major risk elements, challenges and uncertainties in the approach which has been chosen

Schedule

- a proposed schedule of work items, major milestones and deliverables which defines the expected total project length

Deliverables

- description of physical deliverables, reports, process definition, test results, etc

Cost

- an assessment of project costs broken down by labor, materials, overhead, and capital
- your cost sharing component
- an evaluation of the cost of ownership in absolute terms or relative to the cost of the typical current process
- a proposed payment schedule based on the milestones and/or deliverables in the schedule

Company Background

- relevant company information
- 3 year financial performance track
- staff size and make-up by function
- key management and technical personnel description
- primary markets served and major customers
- key previous innovative developments and intellectual property (patents) held related to the proposal topic
- existing product portfolio

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Proposal Evaluation

Upon receipt, pre-proposals will be forwarded to the USDC Technical Council members for review. No communications between the submitters and the review teams are anticipated during the pre-proposal evaluation phase, however clarifications may be requested. The evaluation will be based solely upon the written pre-proposal.

If your pre-proposal is selected for further consideration, you will be notified by e-mail of this result and asked to submit a full proposal. Full proposals will be assigned to a Project Team consisting of USDC Tech Council members to help develop the final submission. At this time you must become a USDC member for further consideration.

During the final selection process of full proposals, some communication or negotiation between the potential supplier and representatives of USDC may be initiated over the terms, conditions, specifications, deliverables, schedule or other relevant factors contained in the proposal in advance of awarding of a contract. Granting of any awards to proposals submitted in response to this RFP is contingent upon the continued availability of funding from the U.S. government.

2007 RFP Schedule

The schedule of activities for the USDC 2007 RFP is as follows:

11/27/06	Solicitation of pre-proposals issued
01/15/07	Pre-Proposals Due
02/05/07	Selection for full proposals (notification within 1 week of selection)
04/02/07	Full Proposals Due
05/23/07 (selection)	Selection for presentation to USDC Governing Board (notification within 1 week of selection)
08/10/07	Presentation to USDC Governing Board for approval

Contact Information

Communication and questions during the proposal period and submission of proposals should be directed to:

Brett Bryars
Dir. of Technical Programs
84 W. Santa Clara St., Suite 790
San Jose, CA 95113
408-993-8111
408-993-8121 (fax)
bbryars@usdc.org