Trusted Device List (TDL)
Request for Proposal (RFP)
(Showing Changes from v1.0)

CONTENTS

1 EXECUTIVE SUMMARY

MovieLabs is working with the six major US Hollywood studios, as well as exhibitors, distributors, deployment entities, integrators and device manufacturers to specify and build a D-Cinema worldwide centralized Trusted Device List (TDL). The goal of the TDL is straightforward: develop a worldwide high availability Trusted Device List Registry for D-Cinema that is voluntary and open to all ecosystem members in a non-discriminatory manner.

The TDL will contain all information necessary for service providers and other ecosystem members to generate Key Delivery Messages (KDMs) to enable the exhibition of Digital Cinema Packages (DCP). Information will be made available to authorized subscribers. The registry would not be involved in the actual KDM or DCP generation. The goal of a TDL system is to maintain timely and accurate information on participating Devices so that participating subscribers can obtain information needed to issue KDMs.

The TDL will be capable of receiving facility list information directly via an automated Facilities List Message (FLM-X) and through a web interface. The information will come either directly from the facility or through an authorized intermediary such as a deployment entity, system integrator, or country-specific centralized TDL. Each authorized distributor in a territory would subscribe to the TDL to take a snapshot (replicate the information) of the registry in order to generate KDMs.

This RFP involves a subset of the foregoing. Specifically, MovieLabs is inviting recipients ("Vendor(s)") of this Request for Proposal (this "RFP") to submit proposals responding to this RFP ("Proposal") regarding the creation, operation, support and automation of a TDL for digital cinema (the "Project").

Vendor(s) will be providing a proposal that includes four primary functions. These are:

- Build the TDL – A design and development task to create the requisite platform to maintain the TDL

- Operate the TDL – Providing the hosting, maintenance, and management of the TDL

- Support – Provide primary support for access and operational user issues with the TDL

- Automation – provide and facilitate the automatic reporting of information from facilities to the TDL

1.1 Contact

The primary contact for this Project can be reached by either phone or email.

Craig Seidel

Motion Picture Laboratories, Inc.
530 Lytton Ave, Suite 300
Palo Alto, CA 94301
cseidel@movielabs.com
650-646-2280

The secondary contact is:

Steven Weinstein

Motion Picture Laboratories, Inc.
530 Lytton Ave, Suite 300
Palo Alto, CA 94301
sweinstein@movielabs.com
650-646-2295

1.2   Document Organization

This RFP is organized as follows

Section 1: Executive Summary

Section 2: Overview

Section 3: Proposal and Bidding Process – Information about responding to the RFP as well as information on how Proposals will be evaluated

Section 4: Proposal Requirements – Additional terms and instructions for the proposal

Section 5: Project Framework – Describes the projects that will be bid upon for the TDL

Section 6: TDL description

Section 7: Representative Use Cases – Use cases designed to illustrated TDL usage

Section 8: Notional Design – A description of some design concepts and tradeoffs

1.3   MovieLabs as Agent

MovieLabs is executing this RFP as agent for a yet to be formed non-profit entity that will manage and control the TDL (the "TDL Entity"). MovieLabs' current expectation is that the initial contracts will be with MovieLabs, but subsequently will be transferred to the new TDL Entity on formation.

1.4   Change History

The following changes were included in this draft:

Section	Change
1.4	Added this Change History section
2.4	Alternative Architectures for the TDL discussed and explicitly permitted as viable bids
3.6.2.2	Alternative Architectures will be considered in bid evaluation
4.3	Called out that Task 4 can be bid independently and that Task 3 might result in bids limited to certain territories
4.10	Ownership. Clarified that other models rather than "work for hire" would be considered.
6.1.2.1	Clarified that mandatory data in the TDL is a subset of FLM-X message
7.1.2	Clarified the need to define a facility naming convention
8.2.1	Additional discussion about openness of solution for automation.
11.1	Explicitly allowed additional pricing models

2 OVERVIEW

2.1 Trusted Device List (TDL) Overview

A reliable TDL is essential to the efficient, orderly and reliable distribution of KDMs and DCPs to exhibitors.

This RFP is to develop a world-wide high availability Trusted Device List Registry for D-Cinema that is open voluntarily to all ecosystem members in a nondiscriminatory manner.

Participants will include all parties currently involved in the distribution or consumption of KDMs, including studios, distributors, exhibitors, service providers, integrators, centralized territory agencies, and device manufacturers.

The TDL will provide exhibitors and their delegates with a mechanism to share a facility's KDM information with only one entity rather than a collection of entities. It should be easy and cost-effective to use. To achieve these goals, a high degree of automation is required. As there will always be exceptions that require manual intervention, the system must allow support personnel to promptly correct any KDM distribution issues that occur.

Although security is inherent in the key distribution process, some of the data managed in the TDL is sensitive to participating organizations, especially exhibitors. The system must implement access controls and have high quality security.

TDL development involves three distinct tasks: 1) the creation or building of the TDL, 2) the operation of the TDL, and 3) the Customer Support function. An additional task will develop technology to assist in automated data collection of facility information, especially for smaller exhibitors.

2.2 Context

This project is in the context of Digital Cinema as defined by the Digital Cinema Initiative (DCI) as defined in *Digital Cinema System Specification*, Version 1.2, March 7, 2008 [DCI-DCSS], and various SMPTE specifications (see References)

DCPs are delivered to Theater Systems. Theater Systems require key information delivered in the form of KDMs for decryption of DCPs to allow presentation. To issue KDMs, a distributor needs information about the Devices containing Security Managers (SMs) that are being authorized for presentation.

The Goal of a TDL system is to maintain timely and accurate information on participating auditoriums so that participating subscribers can obtain information needed to issue KDMs.

2.3 System Architecture

The following is a conceptual model used to describe and discuss the TDL.
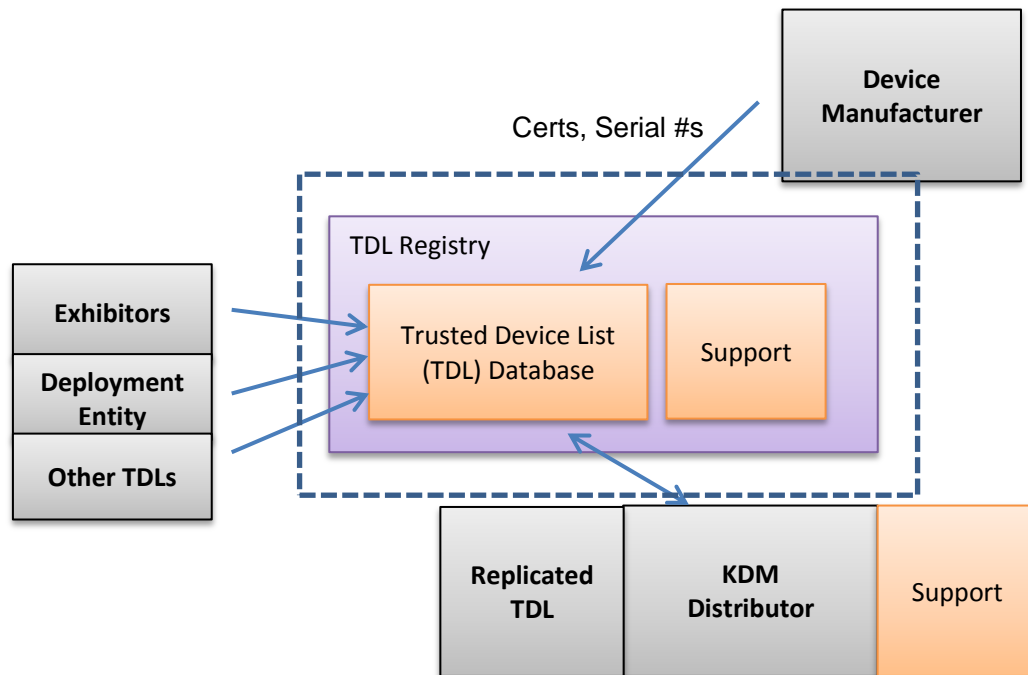
Information about which devices are deployed into auditoriums and facilities, the core of the TDL data, comes from Exhibitors, Deployment Entities, Integrators or other TDL sources (joint ventures, regional authorities, etc.).[1] Device manufacturers optionally submit additional device information into the database for use by users of the TDL validating data about a facility. The TDL maintains this information. KDM distributors query the database with the assumption they will maintain a replicated copy of the TDL. A support function maintains operations.

The following diagram provides additional information on interfaces.

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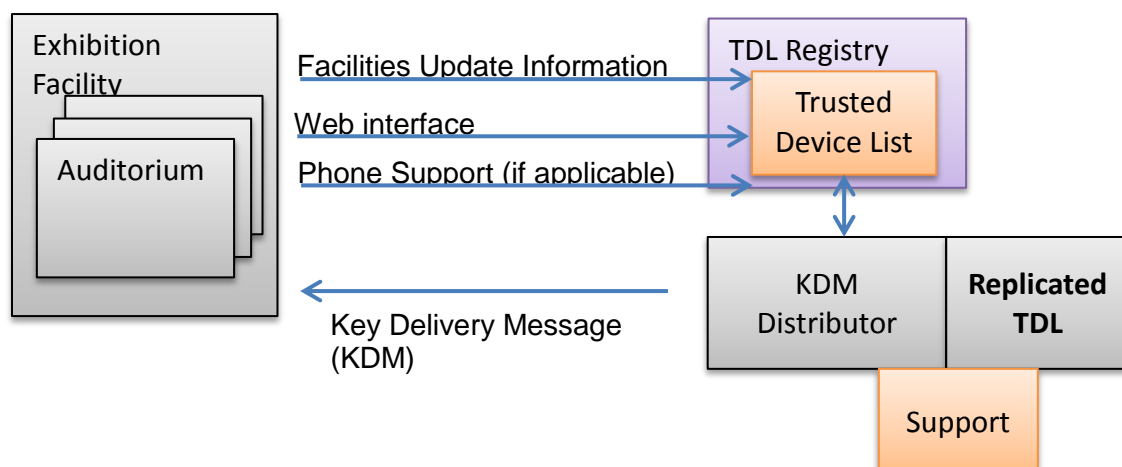
[1] We feel at this time given the limited size of the database and the simplicity of the information that a federated system is not required although we are open to a discussion on this issue.

2.4   Alternative Architectures

The current plan is for the TDL to be a centralized database which is then replicated by qualified parties. MovieLabs recognizes that alternative methods could be used to accomplish the same goals. For example, some possible alternatives might include a mechanism where the TDL Entity just serves as a data validation and forwarding service for any facility information it receives or the TDL Entity serves just to facilitate the automation of facility information collection and provide a publishing mechanism for facilities to announce and make available directly to qualified interested parties.

While these alternative architectures or any other are not currently expressed in this RFP, Vendors are welcome to propose alternative solutions that will meet the requirements of the Project. Such proposals will be fully considered.

2.5   References

[DCI-DCSS]	Digital Cinema System Specification. Version 1.2. March 07, 2008
[SMPTE430-1-2006]	*D-Cinema Operations – Key Delivery Method (including Amendment 1-2009)*
[SMPTE430-2-2006]	*D-Cinema Operations – Digital Certificate*
[SMPTE430-3-2008]	*D-Cinema Operations – Generic Extra-Theater Message Format*
[SMPTE430-7-2008]	*D-Cinema Operations – Facility List Message*
[SMPTE430-9-2008]	*D-Cinema Operations – Key Delivery Bundle*
[FLM-X-Online]	*FLM-X Online documentation*, ISDCF. http://flm.foxpico.com
[ML-FLMX-DATA]	*FLM-X Data*, MovieLabs, v0.6, July 13, 2011
[ML-TDL-RFL1	*Request for Information, February 2, 2012 - http://www.movielabs.com/tdl*

3 PROPOSAL AND BIDDING PROCESS

3.1 Proposal Format and Content

In preparing and submitting Proposals, Vendors are requested to follow the format set forth herein and should provide all of the information requested. All items identified in the following list should be addressed as concisely as possible in order for a Proposal to be considered complete.

3.1.1 Cover Letter

All submission should include a cover letter. The cover letter must confirm that Vendor understands all the terms and conditions contained in this RFP and that the Vendor agrees to and accepts all the provisions of this RFP. Furthermore, it shall state that should the Proposal be selected, both technical and pricing components shall remain valid for the period set forth in Section 3.2.4.

In addition, the cover letter should state that if a contract is awarded to Vendor, Vendor would be prepared to begin services on the date indicated in the Key Events. The cover letter must include the full contact information of responsible individuals available to contact regarding the proposal.

The cover letter must also include the General Release attached hereto as Exhibit B or, if executed separately, the General Release must accompany the cover letter and Proposal submission.

3.1.2 Proposal Content

Proposals to the RFP may be in any form. We request that responses reference the section and paragraph mentioned.

The following items shall be included in your Proposal:

- Qualifications for Proposal. Information concerning qualifications to undertake the effort. Please list all relevant experience.

- Qualifications of Team. Information and names of key individuals that will execute on the effort. Vendor is encouraged to identify key personnel with the understanding that if Vendor wins the contract, those key personnel will be available for project work.

- Meet the requirements described in this RFP. That your proposal covers the requirements of the Tasks of the RFP.

- Approach. For each of the primary tasks an approach on how the work will be accomplished. For the technical areas a full architecture should be provided

- Existing Systems. A discussion of any existing systems (including hardware, software (including third party software) and other such resources) that will be used or required to implement Vendor's proposed solution. To the extent non-commercially available software or non-off the shelf software is proposed, this should be noted clearly in the Proposal.

- Management Plan and Schedule. A complete project plan shall be provided which includes information on how the project will be staffed, managed, and controlled. The proposed project management philosophy used, the engagement and reporting to MovieLabs and finally the overall project schedule and milestones

- Documentation. Please provide any information on any proposed documentation returned for the system.

- Places of non-responsiveness. Please provide any information with regards to how Vendor's solution is different and not responsive to the requirements contained herein.

- Pricing. A complete pricing proposal as suggested in *Appendix A – Pricing*.

3.1.3 Additional information to be included

Responses to this RFP shall include the following information:

- For any Vendor that is a company:
  o Company Name
  o Company Address
  o Company phone
  o Brief description of the company's interest in RFP
  o Which specific tasks the company is bidding on.

- A business Point of Contact (POC) and a technical POC. Optional alternate points of contact may be provided. For each contact, the following information should be included:
  o Person's Name
  o Phone number
  o Email address
  o This this person a business POC, technical POC or both.
  o Indication of preferred contact method

3.2 Timing

3.2.1 Key Events

Action	Date
Draft RFP	April 20, 2012
RFP Issued	April 27, 2012
Intend to Respond	May 10, 2012
Responses Due	~~May 30~~June 6, 2012
Responses Meetings/Presentations,(Vendor Selection, Contract Negotiation	June/July 2012 (planned)
Contract Start (estimated)	June/July , 2012

3.2.2 Intent to Submit a Proposal; Acceptance of RFP Terms

Vendors who wish to submit a proposal should register their Intent to Submit a Proposal by the date stated in the Key Events in *Section 3.2.1 Key Events* by completing the Intent to Submit a Proposal form attached hereto as Exhibit A.

If a Vendor does not submit an Intent to Submit a Proposal form, but still submits a Proposal to this RFP, Vendor acknowledges that Vendor has read and understands this RFP and its terms and conditions, and that Vendor agrees to and accepts all of the terms and conditions set forth in this RFP.

If Vendor does not agree with any of the terms or conditions of this RFP, Vendor should not submit an Intent to Submit a Proposal or a Proposal, but should first contact the primary contact in *Section 1.1 Contact*.

By issuing an Intent to Submit a Proposal, Vendor is not obligated to submit a Proposal.

3.2.3 Proposal Closing Time

Proposals are due in electronic form by midnight Pacific Daylight Time on the date specified in Key Events addressed to the primary contact. If submitting Proposals by post, please inform us so that we can track their arrival. At this time requests for extensions are not contemplated but may be considered.

3.2.4 Duration of Offer

Proposals submitted under this RFP should be considered valid for 180 days from the later of the date that MovieLabs receives the Proposal or the date it receives any update, modification or clarification thereof.

3.3 Questions, Meetings, Down Selection

3.3.1 Pre-Proposal Questions

Questions can be submitted at any time to the primary contact above. MovieLabs may, in its sole discretion and to the extent it deems appropriate, share questions with some or all other Vendors.

3.3.2 Meetings Before Submitting Proposal

- Vendors may request meetings with MovieLabs to discuss topics related to the RFP.

3.3.3 Meetings After Proposals are Submitted

- MovieLabs may select a subset of Vendor(s) to present their Proposal to MovieLabs.

3.3.4 Down Selection and Best and Final Offers

- MovieLabs may select a subset of Vendor(s) to submit a follow up Proposal to clarify certain MovieLabs requirements or Vendor Proposals, and/or to make "best and final offers".

- MovieLabs reserves the right to conduct parallel negotiations with more than one down-selected Vendor(s) with the aim of identifying a preferred supplier and achieving agreement with that preferred supplier on all the key legal, technical and commercial issues.

- MovieLabs reserves the right to control the drafting of the agreement including all schedules to be negotiated between MovieLabs and the chosen Vendor(s).

3.4 Revisions to the RFP

MovieLabs reserves the right, in its sole discretion, to modify this RFP (including the rules governing this RFP) at any time. MovieLabs will use reasonable efforts to provide any such modifications to all Vendors.

Please mention the amendments as part of your Proposal to confirm understanding of any new requirements contained within such amendments.

3.5 Cancellation of RFP

MovieLabs reserves the right, in its sole discretion, to cancel this RFP at any time. MovieLabs will use reasonable efforts to notify Vendors of any such cancellation.

3.6 RFP Proposal Evaluation Process Criteria

3.6.1 Evaluation Committee

The evaluation committee is made up of MovieLabs personnel and may, at MovieLabs' option, representatives of MovieLabs' members.

3.6.2 Evaluation Criteria

Proposals will be evaluated based on various criteria, which may include, without limitation, vendor qualifications, technical, management and cost factors, ability to execute, and ability to operate and support. This section provides additional detail with respect to certain criteria which may be taken into consideration.

3.6.2.1 Vendor Qualifications

Does the Vendor have the ability to successfully deliver and operate such a system?

- Does Vendor have the relevant experience?
- How flexible will Vendor be dealing with changes?
- Is there a commitment to assign qualified personnel to this Project?
- Does Vendor have best industry practices in place for project management?
- As applicable, does Vendor have best industry practices for software development, systems operations, support, and other relevant processes?
- Does the Vendor have a reasonable plan and schedule for delivering the TDL?

- Is Vendor's culture compatible with the needs of the Project? In particular, Vendor should be able to work with the parties who will be involved, including MovieLabs, studios, exhibitors, distributors, device manufacturers, and so forth.

- Does the vendor commit to meeting all requirements for the Project?

- How many of the tasks is the Vendor bidding?

3.6.2.2 Proposal Evaluation - Technical

- How well does the Proposal address the technical requirements?

- Is software developed using environments and tools that can be transferred to a third party for continued development?

- Software development process used and methods used to facilitate support and modification of the software by third parties who were not involved in its development.

- If existing software is used, how robust and respected is that system.

- If an alternative architecture or technical solution is proposed, how well does it meet the requirements?

3.6.2.3 Proposal Evaluation - Cost

- What is the overall cost of the Project? For each primary task.

- How likely is Vendor to achieve the proposed cost?

- What expected changes are included in the Proposal?

- Software Licenses – the price for any 3rd party software licenses required in the system.

- Recurring expenses – What expenses will continue to recur?

3.6.2.4 Overall Evaluation

The selection process involves a number of factors (including those set forth above). No single factor or subset of factors is necessarily determinative. MovieLabs is seeking Vendors with whom we can have a positive productive team-based experience; a *partner*. A Vendor's ability to work as part of a team is an important evaluation criterion.

3.7   Confidentiality of Proposals

Proposals provided as part of this effort will not be shared by MovieLabs with other Vendors. Subject to the foregoing, MovieLabs shall be free to share Proposal with the evaluation committee described in *Section 3.6.1 Evaluation Committee*, for purposes of evaluating the Proposals.

4 PROPOSAL REQUIREMENTS

4.1 Minimum Vendor Qualifications

Each Vendor shall submit satisfactory evidence as to the following qualification(s):

- Each Vendor shall demonstrate that it has been normally engaged for a period of at least (3) years in providing services to the D-Cinema industry, or has relevant equivalent experience;

- Each Vendor shall provide at least two references or other evidence that confirm the Vendor's qualifications for this effort;

- Each Vendor shall demonstrate that it can meet all of the requirements of the portions of this RFP for which it is providing a bid.

4.2 Vendor Teams

Vendors are free to team up with other vendors in order to deliver a complete solution.

If a Vendor would like assistance finding potential partners in the bidding process, please inform the primary contact. Potential partners, if known, will be provided. Any such referral which may be made by MovieLabs is provided on an "AS IS" basis, and should not be interpreted as a recommendation or endorsement by MovieLabs. Each Vendor shall be solely responsible for any partnering decisions made by such Vendor.

4.3 Complete Versus Partial Bids

MovieLabs' preferred approach is to issue one contract to one Vendor (or group of Vendor(s) bidding collectively) for the entire project (e.g., Tasks 1, 2, 3 and 4 identified in Section 1, which are creation, operation, support and automation of the TDL). MovieLabs will definitely also consider bids which focus only on a specific Task or Tasks. If a Vendor would like to bid only on one or two of the Tasks, please make it clear in your bid which tasks you are bidding on. For example, MovieLabs considers Task 4 independent enough so that Vendors who are interested in just bidding Task 4 or portions of Task 4 are encouraged to do so. Additionally, Vendors who have expertise in providing support to specific geographic territories for Task 3 are also encouraged to bid Task 3 qualified to those specific geographic territories.

4.4 Alternative Paths

A vendor is welcome to propose an alternative system or mechanism for each phase or the TDL system overall.

4.5 Contract Type

The ideal Proposal will be for a fixed price. Other types of proposals may be considered.

4.6   Pricing

The pricing provided shall be broken down as outlined in *Appendix A – Pricing*.

Pricing should include each major task broken out. Tasks 1, 2, 3 and 4 should be bid separately.

Pricing should be clear and locked, without reliance on assumed facts that are known or could be determined prior to contract signing.

4.7   Term

The TDL system pricing should assume the initial creation of the TDL plus three (3) years of operation, support and automation. For avoidance of doubt, operations begin when implementation completes beta testing (i.e., testing with parties outside the proposer's team).

4.8   Languages

The TDL system shall support languages as defined in *Section 10 Deployment*. Vendor should state any substantive language assumptions.

4.9   System Updates

There is a requirement that any proposals shall include at least 2 major improvements in the TDL system per year, and multiple maintenance releases that improve minor functions. The major updates will be agreed upon as part of negotiation of the final contract.

4.10 Ownership

The current working model is that work done as part of this Proposal generally will be owned as follows:

- Task 1 – Creation the TDL – done as work for hire, to be owned by TDL Entity.

- Task 2 – Operations – ownership of general infrastructure and processes resides with the Vendor. Interfaces and APIs developed to outside parties, and TDL data, and any custom hardware, acquired software licenses, processes and procedures specific to the TDL to be owned by or licensed to the TDL Entity. General purpose hardware or cloud hardware would be assumed to not be owned by the TDL Entity.

- Task 3 – Support Ownership – ownership of general infrastructure and processes resides with Vendor, however, materials specific to operating the TDL to be owned by the TDL Entity (e.g., help desk scripts, trouble tickets, contact information, etc.).

- Task 4 – Automation – software provided, and all procedures and docs, shall be considered a work for hire and owned by the TDL Entity.

Our goal is to ensure that the TDL Entity retains all elements necessary for continued operation at the end of the terms of the contracts, with the exception of commodity infrastructure, software and services.

If systems are to be built on existing systems or code, ownership and license to such systems can be discussed as part of contractual negotiations, but any third party software or systems which

will not be owned by the TDL Entity should be expressly identified in the Proposal. Additionally, a TDL that already exists would be considered an existing asset and license to such code would be considered. Please identify any items that you wish to retain ownership with your Proposal. If any portions of Task 4 are to be made available only under license, and not as a work for hire, please note that intent.

4.10.1 TDL and Ancillary Data

All data collected and kept as part of the TDL will be owned by the TDL Entity. This includes facility and device data; user and account data; fraud and abuse data, logs; and any other data necessary for system operation. If there are any data items the Vendor feels should be excluded, these should be expressly and explicitly noted in the Proposal.

4.11 System Rollout

System Rollout is planned to occur as described in *Section 10 Deployment*.

The schedule provided below is a desired schedule and only provided for general information.

Action	Date
Initial Phase 1 System Release	December 2012 (estimated)
Full Phase 1 & Phase 2	First year
Phase 3	+18 months
Phase 4,5,6	Year 2+ (to be agreed upon)

4.12 Oversight

MovieLabs will provide oversight over of the Project. The exact nature of this oversight is subject to negotiation.

For the purposes of bidding, our expectation is that there will be development oversight processes such as the following

- API review – review and approval of API's before implemented
- Web UI – review of a wireframe or walkthrough of the Web site before implementation
- Progress and issue meetings. At least bi-weekly status updates phone calls
- Points of contact
  - One primary point of contact for each task (could be the same person)
  - One overall program manager contact
  - One architect point of contact

Also assume MovieLabs will also oversee maintenance, support and other processes related to the Project; also subject to negotiation.

4.13 General Terms

4.13.1 Vendor Costs

Vendor is responsible for all costs and expenses Vendor incurs in preparing, submitting and (if requested by MovieLabs) resubmitting its Proposal, and any other prior or subsequent activity associated with the RFP process, including the evaluation of the RFP, Vendor presentations, meeting attendance, due diligence and contract negotiations or otherwise arising from MovieLabs exercising, or failing to exercise any rights specified in this RFP (including Section 3.4, Revisions to the RFP), regardless of whether or not MovieLabs enters into an agreement with Vendor. MovieLabs will not be responsible, on any grounds, for any such costs or expenses.

4.13.2 Accuracy of Information

In respect of any information contained in this RFP or otherwise provided by, or on behalf of, MovieLabs pursuant to the RFP process:

- such information is provided only so as to indicate to Vendor the scope of MovieLabs' requirements;

- Vendor is solely responsible for identifying and undertaking whatever investigation and due diligence it considers appropriate (including through the due diligence process) in order to verify the accuracy and completeness of such information as well as Vendor's ability to provide the services at the agreed price and service levels; and

- MovieLabs does not give any representation, warranty or undertaking as to, and will not be liable to Vendor (other than to the extent that such liability cannot be excluded by law) in respect of, the accuracy or completeness of such information.

4.13.3 Improper Conduct

Neither Vendor nor any of its representatives will:

- engage in any collusive tendering, anti-competitive conduct or other similar conduct with any other persons, including any suppliers tendering under this RFP process; or

- give or offer any gift, gratuity, or other inducement, whether lawful or unlawful, to any of the MovieLabs representatives, with respect to, or during, the RFP process.

4.13.4 Responsibility for Subcontractors and Vendor Personnel

Vendor is responsible for ensuring that its representatives, nominated subcontractors and all Vendor personnel (including representatives of Vendor or of a nominated subcontractor) comply with these conditions of tender.

4.13.5 Severability

If any part of these conditions of tender is held by a court of competent jurisdiction to be contrary to law, then the remainder will not be affected thereby and will be valid and enforceable to the extent granted by law.

4.13.6 Applicable Law

These RFP terms will be governed by and construed in accordance with the laws of the State of California.

4.13.7 Disclaimer of Liability

- Vendor acknowledges and agrees that MovieLabs is not obligated to Vendor in any manner as a result of Vendor's participation in this RFP, and that MovieLabs expressly reserves the right to accept or reject any Proposal from any Vendor in whole or in part, or to reject all Proposals.

- Vendor acknowledges and agrees that MovieLabs has absolute discretion in carrying out its evaluation of the Proposals and that the evaluation may include a number of factors which may be amended without notice to the Vendor. While this RFP may identify some factors that will be considered, any such factors which are identified should not be interpreted as a statement of all factors. Additionally, MovieLabs may weigh certain factors greater than others. Any selection of winner(s), or rejection of Proposals, made by MovieLabs shall be made by MovieLabs in its sole discretion.

- MovieLabs reserves the right to accelerate, change the dates for, discontinue or otherwise alter the RFP process or the terms of the RFP at any time, and makes no commitments, implied or otherwise that the RFP process will result in a business transaction with one or more Vendors.

- All products mentioned are included as representative examples. There is no recommendation that any particular brand or product be used; and there is no endorsement for any of these products.

- MovieLabs may, in its sole discretion, waive breaches of these terms and conditions by any Vendor. Without limiting the generality of the foregoing, Vendor may elect to accept some but not all late Proposals, and may accept some but not all Proposals which do not fully comply with the requirements of this RFP.

- Vendor should not include any commitment or other response in its Proposal which Vendor is not willing to commit to in the final contract with MovieLabs.

- All documents submitted as part of Vendor's Proposal should include an editable version in Microsoft Word or Microsoft Excel.

- MovieLabs reserves the right to hold one or more meetings with one or more Vendor(s). Nothing in these terms shall be construed to require MovieLabs to provide each Vendor with the same amount of meeting time with MovieLabs.

- This RFP is an invitation to Vendor to make an offer to MovieLabs. Nothing in this RFP or any other communication from, or on behalf of, MovieLabs (including its members,

officers, directors, employees, advisers and representatives ("**Representatives**")) to Vendor will constitute an agreement or representation that a contract will be offered, awarded or entered into.

- No binding contract relating to the provision of the services described in this RFP will exist between MovieLabs and Vendor unless and until a formal written contract is signed by MovieLabs and Vendor.

- MovieLabs reserves the right in its sole discretion and at any time, in respect of some or all Vendor(s) suppliers tendering under this RFP process (including Vendor), to:
  - amend, vary, or supplement any of the information, terms or requirements contained in this RFP, or provided pursuant to the RFP process;
  - change the RFP process, including without limitation varying or extending any time or period in this RFP;
  - discontinue the RFP process, in whole or in part;
  - withdraw an invitation to a supplier to submit a Proposal;
  - reject any or all proposals by a supplier;
  - take any other action it considers appropriate in relation to the RFP process;
  - contract with a Vendor for reasons other than lowest price;
  - cease discussions with one or more Vendor(s);

- Vendor will have no claim against MovieLabs or against any of its affiliates and their respective Representatives with respect to the exercise of, or failure to exercise, the rights set forth herein.

- VENDOR MUST SIGN AND RETURN THE GENERAL RELEASE ATTACHED AS EXHIBIT B TO THE PRIMARY CONTACT IN CONJUNCTION WITH ITS SUBMISSION.

5   STATEMENTS OF WORK

The project is divided into four primary tasks. Each task is defined separately in the sections below. Vendors shall bid on at least one task, and may bid on two or more. Vendors will be encouraged to bid on as many tasks as they are qualified to undertake.

The tasks are as follows:

- Task 1: Build TDL

- Task 2: TDL Deployment and Operations

- Task 3: TDL Operational Support

- Task 4: TDL Automation Framework

5.1   Task 1: Build TDL

This Task is to create the TDL in accordance with *Section 6 TDL Requirements*, *Section 7 TDL Operations Support, Section 9 Service Level Agreement (SLA)*, *Section 10 Deployment*, and other applicable sections.

The vendor shall design, implement and provide software support for the TDL

5.1.1   Primary Functions

The vendor shall perform the following subtasks

1) Fully design and implement the TDL. This will include the creation of the database, API interfaces, database replication tools, web site and other defined components.

2) Integrate the TDL with outside participants, and general installation and update procedures. This shall include an integration function separate from the operational system that allows new participants to integrate.

3) Deploy improvements to the TDL

  a) Major and Minor Software updates

  b) Database Migration as applicable (e.g., if a change requires a database migration)

  c) Performance improvements and defect fixes

4) The vendor shall provide third-level software support during typical business hours (5x8) to assist second-level support when a problem cannot be addressed at the first or second-level support. Third level support need not interact directly with users.

  a) The system shall be designed to meet SLA requirements.

5.1.2   Deliverables

Deliverables include:

1) Software developed under this contract

2) Instructions and procedures sufficient to install, configure and operate a TDL installation.

3) Software maintenance – Provide fixes to bugs, major and minor updates to improve operations and general improvements as required by the evolution of the industry during the period of the contract.

   a) Issue/bug prioritization (in cooperation with MovieLabs), tracking, resolution and reporting

   b) Emergency software fixes

   c) Software updates

4) Documentation

   a) Provide full online documentation for API's, Installation and Design Docs suitable for the operations and support teams to provide TDL services.

   b) Provide internationalized online documentation to the web site.

5) 3rd level technical support.

5.2   Task 2: TDL Deployment and Operations

This Task is to deploy the TDL in accordance with *Section 6 TDL Requirements*, *Section 7 TDL Operations Support, Section 9 Service Level Agreement (SLA)*, *Section 10 Deployment*, and other applicable sections.

The vendor shall build, host and operate the TDL.

5.2.1   Primary Functions

The vendor shall perform the following subtasks

1) Deploy the TDL. This may be installed hardware and network services, cloud-based services or some combination depending on the vendor's design. The vendor is responsible for colocation, hosting, network, system monitoring, maintenance and other hosting costs associated with deployment of the TDL. This includes the TDL database, the TDL interfaces, and the TDL website.

2) Operate and maintain infrastructure as applicable (i.e., a cloud-based service would have different infrastructure requirements than a colocation-based solution)

   a) Maintaining network infrastructure, such as DNS

   b) Providing NOC-level system maintenance

      i) Hardware replacement

      ii) Software installation and configuration in accordance with supplied scripts

   c) Detecting, troubleshooting and correcting failures

   d) Troubleshooting and operations reliability

   e) The vendor shall meet SLA requirements.

   f) Installing and updating the software for new releases and defect rollouts

   g) Maintain a sandbox for testing pending new releases with ecosystem partners

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h) Backup and restore of pertinent data

5.2.2 Deliverables

Deliverables include

1) Fully functioning TDL system

    a) Installed and configured hardware, network and environment. For example, hosting service for all TDL equipment, including colocation (space, power, cooling, etc.) and network bandwidth. A cloud-based installation would have different requirements.

    b) Installed and configured software

    c) Documented operational procedures, sufficient for independent party to successfully operate the TDL

2) Continuing operations

    a) Maintenance and support to keep the system operational and meeting SLA

    b) Reasonable measures to protect from attack (i.e., as defined in *Section 9.4 Attack and Catastrophe*)

5.3 Task 3: TDL Operational Support

This Task is to operate the TDL in accordance with *Section 7 TDL Operations Support*, *Section 9 Service Level Agreement (SLA)*, *Section 10 Deployment*, and other applicable sections.

5.3.1 Primary Functions

The primary functions are database integrity and user/account management. This task includes the following subtasks:

1) Support TDL

    a) Monitoring the health of the TDL; for example, Database integrity

    b) Monitoring data feeds for problems

2) User and Account Management functions, on-boarding of new customers

3) Issue TDL certificates (to access TDL functions). The vendor may be a Certificate Authority (CA) or use other CAs.

4) Provide email support for the Web site.

5) Provide notice and resolution of data conflicts as detected automatically or flagged by service providers or others.

5.3.2 Deliverables

Deliverables include

1) Operational Support as per *Section 7 TDL Operations Support.*

5.4 Task 4 – TDL Automation Framework

5.4.1.1 Primary Functions

This task is to advance automation of collection of data directly from Devices. This is described in *Section 8 Automation.*

There are three subtasks

- Task 4.1 – Automation Technology and Standardization
- Task 4.2 – Build Exhibitor Tool
- Task 4.3 – Build reference code

5.4.2 Task 4.1 Automation Technology and Standardization

5.4.2.1 Primary Functions

This task's primary function is to

1) Develop, propose and promote standards and practices for automatically collecting and validating information from devices as described in *Section 8.1 Technology and Standardization.*

5.4.2.2 Deliverables

Deliverables include

1) Standard recommendations or de-facto standard recommendations
2) Recommended practices
3) Reference design implementations for use by any equipment partner

Vendor is expected to interact with industry partners and applicable organizations as part of this task.

5.4.3 Task 4.2 Build Exhibitor Tool

This task's primary function is to

1) Build one or more tools that collect data from devices and assists in the submission of those data to the TDL. This includes requirements analysis, design, implementation and documentation (both technical and user). This tool is meant to run at a facility to automatically discover and collect the appropriate information about a facility and either automatically send the information to the TDL or provide an output that could indirectly be sent to the TDL.

5.4.3.1 Deliverables

Deliverables include

1) One or more tools. Tools must be internationalized to support other languages, but need only be delivered with English localization.

2) Design documentation

3) User documentation (English)

5.4.4 Task 4.3 Build Reference Code

This task's primary function is to

1) Build reference code that is provided to device manufacturers to be integrated directly into their systems to provide an example of automating submission of data to the TDL. This includes requirements analysis, design, implementation and documentation (both technical and user).

5.4.4.1 Deliverables

Deliverables include

1) Source Code. Source code in agreed upon language

2) Design documentation

3) User documentation (English)

5.5 Documentation

The system design shall be documented so a 3rd party can perform maintenance and improvements.

All documentation shall be in English, should be provided in online HTML representation.

5.6 Software Updates

The system will have updates during its lifecycle. As part of contract award the exact nature of these updates and the procedures for setting priorities will be determined.

6   TDL REQUIREMENTS

The TDL is a reliable controlled data repository. The following sections define requirements for the TDL.

6.1   Data

The TDL database shall maintain all FLM-X data. The database shall also maintain information about TDL participants, access control information and other administrative data.

FLM-X data is described in more detail in [ML-FLMX-DATA]. FLM-X data and format is subject to revision through the ISDCF (http://isdcf.com/ISDCF/Home.html).

6.1.1   Data Sources

The TDL has several data sources: Device manufacturers, Exhibitors, Deployment Entities, Integrators, Service Providers (interacting with Exhibitors), regional authorities and Support.

The TDL shall accept data from these data sources as constrained by access rights. Future sources may be defined in the future and should be accessible using the same interfaces.

6.1.2   Facility Data

6.1.2.1 FLM Data

The TDL shall store all FLM messages, plus additional administrative data including at least when and how the data arrived at the system (e.g., via message, web or REST interfaces).

The mandatory subset of the FLM-X data will be defined as part of this Project. It is expected that many of the fields in the FLM-X message will be optional.

In addition to FLM message, the following data will be maintained:

- Date and time that data arrives or is entered at TDL. Note that IssueDate from the FLM-X structure takes precedence because messages may be delayed

- Method of update: email, web, REST, etc.

- Authority (e.g., username)

- Audit data – any data necessary to validate the integrity of the other data

- Annotation – Where resolution of problems is performed, additional information can supplement the FLM-X data.

6.1.2.2 Notes and Log

Information shall be kept concerning the history of the facility data including errors found and potentially corrected (but not verified) by distributors.

6.1.3 Participant Data

Information shall be maintained on participants, including exhibitors, device manufacturers, studios, service providers, distributors, deployment entities, integrators and their representatives.

Some organizations act on behalf of others. For example, a Service Provider may act on behalf of certain studios to issue KDMs.

6.1.3.1 Participating Organization data

The following information shall be maintained on each organization participating
- Organization information
  - Unique organization ID
  - Organization type
  - Name
  - Address
- Points of Contact
  - Contractual
  - Technical
- Proxies (who can they act on behalf of)
  - Organization ID
  - Allowed functions (e.g., issue KDMs)

6.1.3.2 Individual information

The following information is maintained on each person with access to add or retrieve information from the TDL. People are associated with participating organizations.
- Personal information
  - Name
  - User ID
  - User credentials (login information)
  - Contact information
- Associated organization
  - Organization ID
  - Role in organization (primary POC, technical, administrative, etc. TBD)
- Privileges and access rights
  - May enter data on behalf of organization
  - May retrieve information on behalf of organization
  - May update company information
  - Others TBD

6.1.4 Device information

The TDL shall store device information as supplied by manufacturers or other authorized sources.

Device information may be submitted by manufacturers independently from FLM data. This allows cross checking and provides supplemental information to KDM generating organizations if necessary.

Device information is a subset of DeviceType as defined in [ML-FLMX-DATA]. The particular elements and attributes are:

- DeviceTypeID
  - scope
- DeviceSerial
- ManufacturerID
- ManufacturerName
- ModelNumber
- SoftwareList
- KeyInfoList
- WatermarkingList

These data should be the most current information available. Some information will be created at manufacturer, but if it is known an update (e.g., software update) has occurred, it should be reflected.

This list is subject to minor change as determined during detailed design.

6.1.5 Access Control Data

TDL data is only accessible to those who have been granted access. All data entered is tagged with the organization entering those data.

The policies regarding access control are to be determined, however, the mechanisms described here will support various policies.

Access Controls are granted by one organization to another organization. Granularity of access controls are based on general classifications of information, region and time.

An access control grant contains the following information

- Organization granting access
- Organization given access
- Start/End time. Absence of start, end or both implies unbounded (earlier, later or all respectively)
- Region. Absence of region implies worldwide.
- Access rights
  - May access FLM data
  - May access Device information from manufacturer (granted by manufacturer)
  - May view company information, including point of contact
  - Other, TBD. Any data in the TDL is subject to access control.

6.1.6 TDL Historical Data

The TDL shall maintain for each facility a historical log of any changes to that facilities information. The web interface and database shall include the ability to view or receive the information; and to rollback and return the state of a facility back to an earlier state.

6.1.7 Log Data

Logging will be a passive function that will allow the operators to determine what actions happened to the system. Incoming messages and actions will be tagged and stored. Logs should be kept for a minimum of a year. Tagging will include

- Time received
- Source (individual and/or organization)
- Method (REST, web, etc.)

6.1.7.1 Log Data Visibility

An authorized user shall have access to view the log data. The log data shall be available in the UI.

6.1.8 Database Historical information and rollback

The database shall support the ability to rollback a facilities data to earlier versions of the facilities data for authorized parties.

6.1.9 Data Integrity, Fraud and Malicious Behavior Detection Data

The TDL will maintain data for the purposes of consistency checking, detection malicious behavior related to the TDL, either from participants or outside intrusion. These data to be defined based on functionality described in *Section 6.3 Data Integrity*.

6.2 Interfaces

There are two main interfaces directly to the database: a REST API for automated management of the database, and a Web/HTML interface for direct interaction with the TDL. There is also direct support for bulk ingest of TDL information and bulk download of the TDL. Additional support for receiving an RSS feed for TDL updates is a potential capability.

Interfaces shall support the following functions. These are broken down by role:

- Exhibitor
  - Query FLM-X data
  - Update FLM-X data
  - Manage rights to access FLM-X data
  - Manage data for their account (e.g., users)
- Device maker
  - Query device information
  - Create/update device information
  - Manage rights to access device data?

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- o Manage data for their account
- KDM generation entity
  - o Query device information (as submitted by device makers or their agents)
  - o Query FLM-X information (as submitted by exhibitors or their agents)
  - o Submit corrections to FLM-X data
  - o Manage data for their account
  - o Replicate the entire database or data feed for recent updates to authorized sections of the database
- Administrator/Support
  - o As necessary to support operations as defined in *Section 7 TDL Operations Support.*

The TDL shall support a REST (web services) interface.

The TDL shall support a Web interface.

The TDL shall support bulk ingest.

The TDL shall support a notification interface and a mechanism for feed of information.

6.2.1 REST Interface

REST is a very simple and straight forward web services interface approach. It uses basic HTTP functions which the TDL combines with XML for to create, modify, query or delete 'resources.' FLMs map nicely onto REST's resource model making the TDL interface both conceptually and structurally simple.

The TDL shall support a REST API as defined at [FLM-X-ONLINE].

The REST Interface shall support Web Interfaces functions. The desire is for the web interface to be a front end to the REST interface.

6.2.2 Web Interfaces

The TDL shall provide web interface to the TDL through a web front end. The web front end shall use the REST APIs where practical.

The information contained below is an overall description of the web front end but should include enough information for each role to look at and update the information in the TDL.

The web interface should support different roles that include readers of the data that include service providers, studios, and device manufacturers. The web interface should support roles that are writers or providers of TDL information that include exhibitors, their proxies (including system integrators and service providers) and centralized territory authorities.

The web interface should handle companies that operate facilities and screens and all the appropriate web interfaces to manage and update a facility.

The web interface should support companies that are readers of the information to schedule and manage feeds concerning updates and ability to download or replicate the database

The web interface should support the ability for Companies when authorized to view other company's information.

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The web interface should support standard browser access from desktops/laptops and mobile devices such as smartphones. Note that some exhibitor's best access to the Internet will be over smartphones. The web interface should not take advantage of Adobe Flash.

The TDL shall offer a web interface that will support at least the following functions

- Company Management
  - Creation/Deletion/Modification of a new company
  - User management for a company (creation/deletion/modification)
  - Grouping functions of facilities under a company
  - Access permissions for other companies to view the information and to allow proxy update of the information
  - Email notification when data integrity problems are flagged
  - Access permissions for other companies to proxy manage a facilities or the company's overall information
- Authentication of the User with appropriate access to information
- Facility Management
  - Creation, modification, and deletion of a facility
  - Ability to resolve conflicts for data marked stale or in question
- Data entry, retrieval and management (e.g., modification, deletion).
  - FLM-X equivalent updates. That is, information that is in a FLM-X message can be updated through the web
- Queries.
  - An entity wishing to generate a KDM can query the database for information. As part of this query, the user will be able to download and save certificate information.
- Support interfaces. An authorized support agent will be able to override information provided in FLM-X messages to correct errors.
  - Data Access controls
  - Account Management
  - Historical Log Information
  - Data Conflict Task List – Data integrity problems, Stale TDL Entry or Unverified TDL Data bug list for an exhibitor.
- Support input from Exhibitor Tool as defined in *Section 8 Automation*.

The User Interface must be internationalized and localized. A list of languages and countries is defined in *Section 10 Deployment*.

Access levels are assigned on a per-user basis will determine which functions a user may access. For example, only administrative users will be able to add users.

The implementer will design the web user interface subject to MovieLabs approval.

6.2.3 Bulk Ingest Interface

Bulk ingest involves the initial acquisition of data into the TDL database. An interface will be provided for bulk ingest of TDL data already in existence with exhibitors, service providers and other parties.

Bulk ingest should support both XML and Excel spreadsheets (as defined by vendor).

The TDL shall support bulk ingest.

6.2.4 Bulk Database Replication Interface

Bulk replication of the database allows an authorized party the ability to take a full copy of the TDL database for which they have authorized access. An interface will be provided for bulk replication of the TDL.

The Bulk replication will also allow receipt of only updated information since the last replication.

The System shall support a notification mechanism that updates are available at the permission levels set by an exhibitor.

6.2.5 Notification Subscription Interface

The TDL shall provide automated notification of changes in the TDL and the ability to receive the change in information directly for KDM entities to keep their own copy of the database and be notified of updated information. The TDL shall provide the ability for access to portions of the database as regulated by vendors' individual permissions.

6.2.6 Notification of Facility Data Integrity problems

The TDL shall provide an automated notification to Exhibitors or their designated agents whose facility's data has resulted in a conflict or marked stale. This could be the result of a system integrator reporting a problem with some data or the automated integrity checks determining a problem for automated uploads.

6.2.7 Automated Interfaces Not Supported

The TDL need not provide input via email.

The TDL need not provide input via phone, except as offered through Customer Support.

6.3 Data Integrity

Driving forces behind the TDL are increased data integrity; and greater ease and lower cost to achieve that integrity.   This section outlines some methods that improve data integrity.

The general goal is to work toward the exhibitor or their proxy to work toward automating and actively keeping their data in the TDL accurate. It is assumed that when a problem is found the agreed upon notification and correction policy will remedy the situation. The web UI will also provide a mechanism for an exhibitor to also track problems with their TDL entries.

6.3.1 Consistency Checks

The TDL shall perform data consistency checks when data are received for the purpose of detecting mistakes and fraud.

Updates found to be problematic will be either blocked, trigger a manual conflict resolution procedure, or both. If the entry is manual via the web interface the user will be given the opportunity to correct their input. Meaningful error messages will be returned.

The following is an initial minimal set. However, it is required that as new consistency checks are discovered they can be added.

The initial set of consistency checks is as follows:

- Requests comply with applicable specifications for completeness and correctness. For example, submitted FLM-X data must conform with all applicable schemas and specifications.

- The user is authorized to make the request.

- Data from FLM-X is consistent with the identity of the agent submitting the FLM-X. For example, an access from Circuit A cannot update a Circuit B facility's data.

- FLM-X data does not change in a manner inconsistent with typical theatre operations. For example, devices should not move between facilities rapidly.

- Geolocation of input IP address should be consistent with facility region. Where applicable, IP address should be an additional form of identification.

- The TDL shall not accept device data if there is any possibility the device is a mastering station or other entity that can circumvent DCI security. This is done by matching against known devices, certificates, serial number ranges for known devices, and another method that would distinguish a legitimate device from an illegitimate device.

- The TDL will maintain a banned list of equipment that should not receive KDMs. FLM-X data containing a banned device should be blocked and brought to the attention of a human.

Where integrity is clearly violated, inconsistent input shall be rejected. Where inconsistency is not necessarily incorrect, the information should be brought to the attention of a human within stated period of time.

Where integrity indicates a potential authentication issue, re-authentication shall be required and possibly reported; for example, if a FLM-X update comes from the wrong geography as detected by IP geolocation.

6.3.2 Disallowed Devices

The TDL will maintain a list of disallowed Devices, such as Devices known to be compromised or otherwise are problematic for receipt of secure theatrical data (e.g. mastering stations). The TLD will reject the inclusion of such disallowed Devices in the TDL.

6.3.3 Database Inconsistency Resolution

The TDL shall provide a mechanism for managing conflicting update.

When a distributor or other ecosystem member finds errors in the TDL, they are required to flag that the information is "stale" and potentially provide the updated information as an "unverified update" which the TDL will log and work to resolve the problem. Data users of the TDL will be able to see both the stale record and the new record and may make their own decisions regarding resolving inconsistencies.

The TDL will contact the facility or a designated agent via email, text message or other preferred communication mechanism to resolve the issue so that subsequent updates are correct and don't reintroduce the same error. This synchronization of coordinating participant's discovery of a problem and the subsequent validation of the fix so that other TDL participants receive corrected information is a key function that the TDL will provide. This mechanism is subject to change.

The TDL may use reliability of sources as a criterion for resolving inconsistencies.

6.4   Data Access Controls

The TDL shall provide an access control mechanism consistent with the following.

The access model is that companies entering data have controls over which companies can access their data. Exhibitors specify which companies have rights to look at their data, and also for what region that access is granted. The system will provide an Exhibitor the ability to provide default groups of companies to read their data on a territory-by-territory basis.

Any entity that submits data may query their own data.

Exhibitors may grant other organizations authority to act on their behalf. For example, many exhibitors will grant or have delegated to integrators or deployment entities the ability to update TDL information on their behalf. If Exhibitors are receiving assistance from service providers, they may wish to grant them TDL update authority, as well.

Access control granularity for FLM-X data is the entire FLM-X record.

6.5   Reporting and Dashboards

The system shall generate a collection of reports typical for such systems and provide a live dashboard concerning the operational health of the system, including any outstanding issues.

6.6   Authentication and Data Protection

The TDL shall ensure that access is via authorized parties. If access is from a person, best industry practices for user authentication shall be used. If access is from a system, certificates shall be issued by the TDL operations entity.

Data shall be encrypted. The web interface shall use SSL to protect all sensitive data. The REST interface shall use Transport Level Security (TLS).

The TDL shall have a means to authenticate new parties. The model we assume is an introduction by an authorized party. Note that parties will be required to engage in a participation agreement.

All data shall be periodically backed up offsite.

6.7   Other requirements

6.7.1 Conventions

The TDL will require certain conventions for issues such as naming facilities. The TDL must define best practices or conventions as necessary for the TDL.

6.7.2 Threats

There are numerous threats that can compromise the integrity of the TDL. The system's design must consider these threats and include countermeasures.

- Denial of Service, either at the system level or FLM level
- Cause KDMs to be generated for unintended devices for unauthorized use.

The following is a partial list of threats to the TDL

- Data
    - Unauthorized access by non-participant
        - Creation, modification or deletion of data
            - More serious threat is substituting data to cause KDMs to be generated for incorrect devices either as a denial of service, or to an unauthorized a device for use in piracy.
        - Query of data
    - Unauthorized access by participant
        - Creation, modification or deletion of another party's data
        - Access to data not specifically authorized
    - Disgruntled employees with access (particularly exhibitors)
- System
    - Denial of Service (DoS)
    - monitoring data between TDL and other parties (man in the middle attack)
    - Intercepting transactions (man in the middle or DNS redirection)

6.7.3 Compatibility with other features

The TDL should be compatible with emerging digital cinema technologies.

Digital cinema technology continues to evolve. It is necessary for the TDL to be forward-looking in its architecture to not conflict with these emerging technologies. Two technologies in particular that must be considered are Theater Key Retrieval (TKR) and Device reporting automation (as discussed in *Section 8 Automation*).

In the Theater Key Retrieval (TKR) a facility will directly request their KDMs from the distributor by first authenticating themselves, providing FLM-X data, and then requesting a KDM for their facility. The distributor will respond on demand by creating the KDM and returning it to the facility. This idea is a completely automated mechanism. This mechanism assuming that each facility has the ability to generate either directly or indirectly KDM requests with the proper facility information and that the facility has the ability to query its equipment to automatically gather the

correct facility information. This could impact the TDL in terms of how and when FLM-Xs are reported. It may also impact automation.

6.8 Regulatory Requirements

The system shall comply with applicable territory regulations. Any assumptions on this should be stated.

7 TDL OPERATIONS SUPPORT

TDL Operational Support supports the ecosystem worldwide. There is a requirement to provide multiple language support either via a translation service or directly. There are two basic categories of support, one for bringing new ecosystem members into the System and keeping them operational (System Operations), and the second for keeping the integrity of the data up to date (Database Operations).

Operational Support is a first-line activity, and in most cases mostly an extended-business-hour type activity. Data Support should be assumed to be a second-line of support issue is also an extended-business-hours support activity. Data Support is provided as a second-line activity behind Service Providers, Deployment Entity, and System Integrators. Support will be primarily by email with secondary phone support. The actual business hours of support will probably change as the system goes online in new territories.

Data Support is intended to be a second-line activity as the Service Provider/Distributor will generally be the first line of support and will themselves determine errors and issue corrected KDMs based upon these support calls received with their updated corrected data. The Service Provider/Distributor will have the responsibility to report any problems noticed to the TDL directly and facilitate the correction of the Registry for the future.

Support for exhibitors with problems determining the correct information to include in an FLM-X message is outside the scope of TDL Operational Support.

7.1 System Operations

TDL Operational Support addresses the administrative functions of the system such as accounts and users. It primarily is involved in correcting operational issues and only in limited cases does it include data-related activities such as the contents of the FLM-X.

7.1.1 Account Administration

The vendor is responsible for the following

- Adding and removing companies
- Adding and removing users with various update permissions

The system should use best industry practices for

- Authenticating users
- Authenticating systems authorized to access the TDL
- Account recovery (lost username and/or password).
- Support for multiple roles, such as:
  - Exhibitor
  - KDM Generation
  - System Integrator/Proxy Facility/Deployment Entity

       o   Country Level Proxy/Territory TDL

The system should be monitored for unauthorized access to the system. This should be a combination of both automated tools and audits.

Administrative support will likely be required for username and password support. The means to authenticate the party at the other end of an email or phone call must be part of the system design.

7.1.2 System Administration

Systems require general administration. Some examples of this administration include

- Issuing certificates for access to the TDL

- Controlled conventions, naming and vocabularies, particularly around identities (e.g., unique exhibitor names). As part of this effort, the Vendor shall define an open identifier scheme to identify facilities.

7.1.3 User Training and Help

The vendor will create online resources to help users perform typical functions and to work around typical problems. The goal is to allow users to help themselves rather than contacting support. These can include

- How-to's

- Frequently Asked Questions (FAQ)

- Help with specific support topics (e.g., account recovery)

- Instructions for troubleshooting common problems

7.2 Database Operations

The vendor will respond to any database anomaly notifications generated by the system such as those resulting from database integrity issues.

The vendor will follow established procedures for responding. Actions may include, but are not limited to:

- Allowing or denying a database update based on established criteria

- Escalating the problem to a defined 3rd party

7.3 Phone, chat and email Support

The vendor will provide extended business hours support for administrative and database support.

Users experiencing a problem may call in for help with system operations problems or database operations problems. There may be a nominal charge for support to discourage frivolous use (TBD). Vendor is encouraged to make recommendations.

7.3.1 Support functions

Support includes the following

- First-level phone support for
  - administration (e.g., account management, onboarding of new members, initial integration and operation)
  - any operational problem with the TDL (e.g., problem accessing REST web services APIs)
  - special interfaces and integrations with partners
- Second-level phone support for Data Support
  - Help with database data errors
- Bug reporting
  - Identify and report bugs that become evident in the support process
  - Assist developers isolate bugs.

Users may be given the option of using email or chat.

7.3.2 Support Tracking

Vendor shall maintain and report typical support statistics in order to determine if the user base is being well served and to identify areas for improvement. Data may include, but is not limited to:

- Number of calls taken
- Average and worst wait time
- Average resolution time
- Percentage of issues resolved
- Percentage of issues escalated to level 2 or level 3

Vendor shall collect information on customer satisfaction, typically acquired through a survey mechanism.

Vendors should propose best practices for monitoring such as supervisor monitoring and call recording.

8 AUTOMATION

Looking at the TDL ecosystem more broadly, there are opportunities to improve the timeliness and accuracy of data by automatically collecting data from devices and reporting those data automatically. As there are many different environments, automation is not a single solution, but a family of technologies and tools that address specific problems for specific environments.

Exhibitors who do not have the benefit of centralized data centers for reporting should have the ability to collect and report FLM-X data in an automated a manner as possible. This has the potential to reduce the workload required to collect data, and to improve data quality.

8.1 Technology and Standardization

Current specifications do not currently define all the interfaces necessary for data collection from devices. Specific areas for improvement include device discovery (identifying all devices on a network), data collection (standardized means to collect as much FLM-X data from a device as possible) and verification (confirm that data collected is accurate and generated KDMs are likely to work).

A technology and standardization activity would

- Identify areas where technology development or standardization are appropriate

- Develop and document recommended standards and practices

- Propose and promote technologies and practices to relevant bodies, such as ISDCF

8.2 Exhibitor Tool

Some exhibitors, especially smaller ones without infrastructure to collect and disseminate FLM-X data, could benefit from a simple tool run on premises to collect FLM-X data from devices within a facility and either automatically or indirectly send the information to the TDL.

This tool shall perform the following functions

- Determine which devices are available

- Collect data from those devices and store the results

- Allow an operator to add other FLM-X data that was not collected from devices

- Interface with the TDL to submit the data.
    - Note that APIs might be built for the web interface to work with this tool. For example, a user might "upload" data collected by the tool, filling in fields that would otherwise have to be entered manually.

Additional functions may include

- Device validation (i.e., generation of data that verifies device information is correct).

8.2.1 Exhibitor Tool Variants

The specific way in which the Exhibitor Tool operates is not fully determined and Vendors are free to specify any approach to solving the problem of facilitating automation. For example, one approach could be a tool that generates a DCP that an operator shows on the screen that presents the information as a collection of QR codes on the screen that a user then uses their smart phone to photograph and submit over a cellular network via a Phone app.

8.3   Reference Code

The development of standardize reference code that forms the proper FLM-X record and demonstrates how to automatically transmit it to the TDL.

9 SERVICE LEVEL AGREEMENT (SLA)

9.1 Reliability

9.1.1 Reliability Calculations

Mean Time to Repair (MTTR) is the amount of time to repair after a failure. MTTR is important in the TDL because downtime over a couple of minutes blocks emergency KDM issuance.

Availability is uptime divided by total time. This is a function of both failure rate and MTTR. For example, something that fails once every 100 days for 1 day (0.99 availability) has the same availability as failing every 50 days for ½ day. Unfortunately, you can't go directly from availability to MTTR.

Availability is exclusive of scheduled maintained. For example, if there a system is down for 1 hour over a 102 hour period with 2 hours of scheduled maintenance is 1-(1/(100-2)) = .99 or 99%.

9.1.2 Availability Requirements

The TDL shall have availability as indicated or higher.

Function Category	Availability
Critical	99.99%
General Functions	99.9%
Non-critical functions	99.5%

Critical functions include:

- Read/Write ~~KDM~~ FLM-X via REST
- Read/Write ~~KDM~~ FLM-X via Web interface

General functions are those that are neither Critical nor Non-critical

Non-critical functions include

- Bulk-ingest

9.1.3 Defect SLA

Provider shall provide services with the ability to repair defects/bugs with the following level of service:

Defect Severity	Response time	Max resolution	Coverage
Sev 1	1 hour	ASAP	24/7/365
Sev 2	8 hours	1 week	Business hours
Sev 3	1 week	Next release	Business hours

Sev 1 – Key function is inoperable and no known workaround

Sev 2 – Key function inoperable and only complex workaround available

Sev 3 - Secondary function not available

If a vendor is offering a different level of Defect SLA, please note that in the proposal and the rationale behind the differences.

9.1.4 Scheduled Maintenance

As part of contract award, scheduled maintenance periods that are in line with industry best practice will be established.

9.2   Response Times

Additional response times for technical support and other response times will be established during contract award.

9.3   Deployment Assumptions

The system must be sized to support at least the following.

9.3.1 Sizing Minimums

The following shall be used for sizing and capacity planning purposes. Actual values may exceed these, so margin must be included. These are all relatively small numbers by modern system standards, so substantial margin is expected.

Parameter	Value
Total Facilities	100,000
Auditoriums per Facility	1-30
Digital Screens	200,000
Devices/Screen	2
Total Devices	400,000
Data/Device	5,000B
Total Active Data	2GB

Table 1. Facility Parameters

Parameter	Value
Device change rate in auditorium changes/day	1%
Auditorium updates/day	1,000
FLM Updates/Day (2x because 2 auditoriums/facility)	2,000
Rate of update	1.4/minute
Size of FLM(5K/device * 4 devices)	20KB
Size of FLMs updated per day (2,000 * 20KB)	40MB

Table 2. Change Parameters

Parameter	Value
KDM generation entities (database readers) [Note Assuming readers have access to full database.]	200
Number of queries if each reader queries once/minute	200/minute
Size of reads if full query sent to each KDM generator (200 * 2GB)	400GB
Size of database query if each KDM generator queries once/day (200 * 40MB)	8GB
Assumed size of all queries/day	450 GB
Average (450/24/60/60 * 8)	42.7Mbps (assumes even loading all day)

Table 3. Query Volumes

Following are values we believe are reasonable estimates based on the numbers above. These values are based on reasonable future growth. Initial configuration does not need to support these volumes.

| Parameter	Value
Database	8GB
Bandwidth	at least 25Mbps, better at 50mps
Outbound volume	500GB/day or 15TB/month
FLM Archive growth rate	40MB/day, 1.2GB/month, 14GB/year
Database update rate	1.5/minute
Database query rate	~200/minute.(3.5/second)

Table 4. Bandwidth and Database Size

9.4   Attack and Catastrophe

Reasonable measures shall be taken to avoid common disaster scenarios such as Distributed Denial of Service (DDoS) attacks or a regional earthquake. For the avoidance of doubt, we are not requiring protection from extraordinary events such as a concerted attack by expert network anarchists or a government.

9.5   Support Availability

'Extended business hours' is defined as Monday-Saturday, at least a 12-hour window in the regions supported, consistent with the requirements of exhibition.

Support requirements are 24x7x365 unless otherwise noted.

10 DEPLOYMENT

10.1 Geography Rollout

Our plan is to deploy the TDL first in the United States and Canada. Once operations are stabilized, the TDL will deploy in Europe. That will be followed by Asia Pacific, the Middle East, Central and South America, and Africa.

The exact rollout order will be determined at a later date and depends on factors such as the scope and pace of digital rollout in each region; the Vendor's existing footprint and rollout capabilities; and any logistical issues that affect our ability to deploy such as the number of languages that must be supported.

For the purposes of bidding, assume the system will be rolled out in phases as follows, although only Phases 1-3 should be priced:

- Initial System Rollout
    - o Phase 1 – United States
    - o Phase 2 – North America (Canada, Mexico)
- Next Geo
    - o Phase 3 – EU - Priority to be determined as part of the effort
- Rest of the World
    - o Phase 4 – Asia
    - o Phase 5 – Remainder of Central America and South America
    - o Phase 6 – Middle East and Africa

As part of the contract award we will finalize with the winning Vendor(s) the final rollout strategy for the world. We anticipate hosting the service in at least North America, Europe and Asia. Vendor should state assumptions.

10.2 Languages

All user interfaces and documentation shall be internationalized (i.e., can support all common languages). Phone support may support languages through phone-based translation services.

User interfaces shall be localized (i.e., translation, layout, etc.) to support the following language. Customer Support shall support the following languages.

The following table is for bidding. Some languages may change based final rollout strategy.

Region	Web Language	Support Language
United States	English	English*
North America	English, French, Spanish (Latin)	English*, French, Spanish
Europe	English, French, Italian, German, Spanish (Latin and European), Portuguese, Dutch, Danish, Norwegian, Swedish, Finish, Polish	same

| **Other** | TBD: Japanese, Korean, Russian, Chinese (Mandarin, Cantonese), Arabic, etc. | To be determined as part of rollout strategy |

* These languages must have native language support, not translation services

11 APPENDIX A – PRICING

11.1 Pricing Summary

We are expecting fixed priced contracts, although we will consider other pricing models, which could include license and transactional models.

Please specify which tasks you are bidding on explicitly.

For each task bid, Vendor should provide a price including a breakdown of non-recurring expense (NRE) and recurring expense. We are interested in the bids to be broken down by the major tasks. Information we are interested in include:

- Development NRE – Non-recurrent expense (NRE) associated with development, integration, documentation, etc.

- Yearly Software Maintenance – recurring expense for maintaining and supporting the software, this includes improvements and 3rd level support

- Licenses NRE – cost to purchase any required licenses

- License Maintenance – annual cost for purchased license maintenance (including support if applicable). Note that this does not include maintenance for the software the Vendor delivers for the TDL.

- Equipment NRE – Capital equipment NRE

- Equipment maintenance – Annual maintenance costs associated with capital equipment

- Deployment NRE – NRE associated with deploying the TDL, exclusive of capital equipment

- Vendor Operations –Recurring expenses associated with operating the TDL provided by the Vendor

- Operations Recurring – Recurring expenses associated with operating the TDL, not provided by Vendor. Examples include collocation, network and cloud services costs. Note that Vendor pays these costs during the term of the Project.

- Support Recurring – – Recurring cost to provide TDL Operations and Support

- Other NRE – Any non-recurring expense not covered by one of the above

- Other Recurring – Any recurring expenses not covered by one of the above

Where applicable, we would like to be able to understand the pricing requirements for the following periods:

- Pre-Launch – All activities prior to launch. Launch is general availability of the TDL in one region, probably the US.

- Year 1 – the first year after launch

- Year 2 – the second year after launch

- Year 3 – the third year after launch

Pricing is only required for rollout Phases 1-3 (US, North America, and Europe). Vendors are encouraged but not required to bid other phases marked as options.

Pricing should include the right of MovieLabs to terminate for convenience, and a reasonable termination fee to protect Vendor from unrecovered costs which have been occurred. MovieLabs prefers a simple approach (e.g., X months recurring fees, Y% of remaining recurring fees).

All pricing should include incremental pricing. For example, if the proposed system is architected to support a specific capacity, but additional capacity is required, the pricing should include pricing for additional capacity (e.g., additional hardware, additional software licenses, additional maintenance, etc.). The pricing should address reasonably foreseeable changes, such that pricing for such changes do not need to be negotiated during the term.

Additionally, the pricing should provide a process for pricing non-foreseeable changes, to ensure the pricing offered at such time is competitive with pricing that is available from competitors.

The pricing should include a rate card for labor services for any services which are out of scope, including changes. The rate card should apply throughout the term.

The pricing should include the cost, approach and mechanism for transferring operations, maintenance, and support to another entity at the end of the term of the contract. This is ask for evaluation purposes and contingency and not as an indication that follow-on operations, maintenance, and support will not continue with the Vendor.

Additional detail is welcome and will assist in our evaluation.

11.2 Supporting Data

Vendor should provide supporting data to justify pricing. This may include any data the Vendor feels is appropriate.

State any assumptions related to the pricing model.

Credibility of pricing is very important. We want to ensure with a high probability that the tasks will be achieved close to the proposed price.

12 EXHIBIT A. INTENT TO SUBMIT A PROPOSAL

INTENT TO SUBMIT A PROPOSAL

Name of Vendor ("Vendor"):	

By providing this Intent to Submit a Proposal, the undersigned ("Vendor") confirms that it intends to submit a Proposal in response to the Request for Proposal tendered by Motion Picture Laboratories, Inc., dated [____], titled TDL ("RFP"). The person identified below will be Vendor's primary contact who should receive all communications from MovieLabs related to the RFP.

	Contact
Name:	
Address:	
Telephone (land):	
Telephone (mobile):	
Fax:	
Email:	

Please mark the tasks that you intend to bid. This is provided for informational purposes and is not binding in any way.

Task 1	yes □ no □ undecided □	Task 3	yes □ no □ undecided □
Task 2	yes □ no □ undecided □	Task 4	yes □ no □ undecided □

By signing below, Vendor acknowledges and confirms that it has read the RFP and that Vendor accepts all of the terms and conditions of the RFP. By submitting this Intent to Submit a Proposal, Vendor is not obligated to submit a proposal. Should Vendor at any time decide that it will not submit a proposal, Vendor should so notify the MovieLabs primary contact identified in the RFP.

Signature:	
Name:	
Date:	

13 EXHIBIT B. GENERAL RELEASE

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GENERAL RELEASE

</div>

Acknowledgments

Vendor acknowledges that Vendor has read and agrees to all of the terms and conditions set forth in this RFP, including, without limitation, MovieLabs' Disclaimer of Liability.

RELEASE

VENDOR, ON BEHALF OF ITSELF AND ITS OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES, AGENTS, PARENT COMPANIES, SUBSIDIARIES, AFFILIATES, PREDECESSORS-IN-INTEREST, SUCCESSORS-IN-INTEREST, ASSIGNS, PARTNERS (GENERAL AND LIMITED), MEMBERS, CONTRACTORS, INSURERS, AND ATTORNEYS (THE "RESPONDENT PARTIES"), HEREBY RELEASES, WAIVES, ACQUITS, SATISFIES AND FOREVER DISCHARGES, AND COVENANTS NOT TO SUE, MOVIELABS, MOVIELABS' MEMBERS AND EACH OF THEIR PAST, PRESENT AND FUTURE OFFICERS, DIRECTORS, SHAREHOLDERS, EMPLOYEES, AGENTS, PARENT COMPANIES, SUBSIDIARIES, AFFILIATES, PREDECESSORS-IN-INTEREST, SUCCESSORS-IN-INTEREST, ASSIGNS, PARTNERS (GENERAL AND LIMITED), MEMBERS, ATTORNEYS, CONTRACTORS, AND INSURERS (THE "MOVIELABS PARTIES") FROM ALL MANNER OF ACTION AND ACTIONS, CAUSE AND CAUSES OF ACTION, SUITS, DEBTS, DUES, SUMS OF MONEY, ACCOUNTS, ATTORNEYS' FEES, COSTS, EXPENSES, BONDS, BILLS, SPECIALTIES, COVENANTS, CONTRACTS, CONTROVERSIES, AGREEMENTS, PROMISES, VARIANCES, TRESPASSES, DAMAGES, LIABILITIES, JUDGMENTS, EXECUTIONS, LIENS, CLAIMS AND DEMANDS, WHETHER CONTRACTUAL, TORTIOUS OR OTHERWISE, IN LAW OR IN EQUITY, OF EVERY KIND AND NATURE WHATSOEVER, KNOWN OR UNKNOWN, MATURED OR UNMATURED, ACCRUED OR NOT ACCRUED, WHICH THE RESPONDENT PARTIES EVER HAD, NOW HAVE, OR HEREAFTER CAN, SHALL OR MAY HAVE, AGAINST THE MOVIELABS PARTIES FROM THE BEGINNING OF TIME TO THE END OF TIME FOR, UPON OR BY REASON OF ANY MATTER, CAUSE OR THING WHATSOEVER ARISING OUT OF OR IN CONNECTION WITH THIS RFP, MOVIELABS' EVALUATION AND ANY RESULTING DISTRIBUTION OF THIS RFP FOR EVALUATION. NOTWITHSTANDING ANYTHING TO THE CONTRARY HEREIN, VENDOR DOES NOT RELEASE, WAIVE, ACQUIT, SATISFY OR DISCHARGE ANY CLAIM IT MAY HAVE FOR ANY OF ITS RIGHTS UNDER SECTION 1668 OF THE CALIFORNIA CIVIL CODE.

Waiver of Other Claims

Vendor acknowledges that there is a possibility that subsequent to the execution of this General Release, it will discover facts or incur or suffer claims which were unknown or unsuspected at the

time this General Release was executed, and which if known by it at that time may have materially affected Vendor's decision to execute this General Release. Vendor acknowledges and agrees that by reason of this General Release, Vendor is assuming any risk of such unknown facts and such unknown and unsuspected claims. Vendor has been advised of the existence of Section 1542 of the California Civil Code, which provides:

> A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR.

Notwithstanding such provisions, this General Release shall constitute a full release in accordance with its terms. Vendor knowingly, voluntarily and expressly waives the provisions of Section 1542, as well as any other statute, law, or rule of similar effect, and acknowledges and agrees that this waiver is an essential and material term of this General Release and without such waiver Vendor's submission would not have been accepted for consideration by MovieLabs. Vendor hereby represents that it has been advised by its legal counsel, understands and acknowledges the significance and consequence of this General Release and of this specific waiver of Section 1542 and other such laws.

Governing Law and Venue

This General Release shall be governed by, and construed in accordance with, the laws of the State of California, excluding that body of law relating to conflicts of law principles. In connection with any litigation arising out of or relating to this General Release, Vendor irrevocably consents to the exclusive jurisdiction and venue in the federal and state courts located in the county of Los Angeles, California.

IN WITNESS WHEREOF, the undersigned has executed this General Release as of _____, 2012.

Name of Respondent: Address of Respondent:

By_____ (Signature) Street_____

_____ (Printed Name) City_____

State/Zip_____

Its_____ (Title)

Country_____