Laser Transfer/Donation or Disposal Procedure

1. Purpose

The purpose of this procedure is to detail the process for transferring or disposing of Class 3B and/or Class 4 lasers, as well as equipment containing embedded Class 3B and/or Class 4 laser systems to Principal Investigators (PI)/Center Directors, Laboratory Equipment Maintenance (LEM), Research Infrastructure Strategy and Planning (RISP), Research Asset Management (RAM) and the Laser Safety Officer (LSO).

2. Scope

This procedure applies to all KAUST research spaces (i.e. this does not apply to the KAUST Research and Technology Park) where Class 3B and/or Class 4 lasers as well as embedded Class 3B and/or Class 4 laser systems are used.

3. Definitions

ASEPC	Academic Space, Equipment and Planning Committee. The committee is responsible for allocating space as well as approving, funding and managing equipment (with a total cost, including equipment price, taxes and shipment, equal or exceeding $20K) to the entire KAUST research community.
CDRH	Center for Devices and Radiological Health is a branch of the U.S. Department of Health and Human Services that is responsible for regulating laser devices in the USA. The CDRH classifies lasers in different categories from Class 1 (low hazard) to Class 4 (high hazard).
Embedded laser	A device containing a Class 3B or Class 4 laser system that is enclosed in a protective housing and whereby the accessible laser emission from the laser is limited via the use of engineering controls. The classification of the whole device (when all engineering controls are in place) is lower than the laser class enclosed in the device (i.e. lower than Class 3B or Class 4 laser system).
IEC	International Electrotechnical Commission is the international standards and conformity assessment body for all fields of electrotechnology, including lasers. The commission prepares and publishes international standards for all electrical, electronic and related technologies. The IEC document 60825-1 is the primary standard that outlines the safety of laser products.
LEM	Laboratory Equipment Maintenance team partners with the researchers to deliver expert technical support and maintenance of critical research instrumentation, including laser systems.
LSO	The Laser Safety Officer is a Laboratory Safety Specialist, within the Research Safety Team (RST), who is responsible for the university's compliance with the standards for safe use of lasers in research.

PI	Principal Investigator is the person that oversees the research project involving the use of lasers and that is responsible for the transfer or donation of such equipment.
RST	Research Safety Team, which is part of Health, Safety and Environment (HSE) Department, oversees the safety aspects and hazard controls in laboratories.
RAM	Research Asset Management team oversees the management of asset equipment, this includes tagging equipment, keeping an up-to-date inventory of asset equipment, assisting PI/Center Directors with the removal of equipment following transfer/donation or disposal request.
RISP	Research Infrastructure Strategy and Planning team reviews and assesses all capital equipment proposals prior to ASEPC's approval. This office oversees the implementation of the committee's decisions and works closely with the Research Asset Support team for the KAUST research community.

4. Introduction

Transfer/donation (including transfer/donation to a departing PI to his/her new university/entity) or disposal (for scrap or sale) of all Class 3B/4 lasers and/or equipment containing embedded Class 3B/4 laser systems requires notification via email to the Laser Safety Officer (LSO). This will help keep the KAUST laser inventory accurate and ensure the safe and responsible disposal/transfer of these potentially dangerous, Class 3B and Class 4 laser systems.

Under no circumstances should Class 3B/4 lasers and/or equipment containing embedded Class 3B/4 laser systems be abandoned, disposed as regular trash or offered for sale to the general public. Contact RISP (ASEP@kaust.edu.sa) as well as the LSO (hse@kaust.edu.sa) to initiate proper transfer/donation and disposal of a laser equipment.

5. Responsibilities

The PI or Center Director is responsible for:

- Informing the appropriate departments (including RISP and the LSO) when a Class 3B/4 laser and/or equipment containing embedded Class 3B/4 laser system is transferred/donated or sent for disposal by signing the correct form. As such, this person is required to follow the KAUST Financial Management Policy (link) and cannot delegate this responsibility to a member of his/her team (see Schedule of Delegations and Authorities);
- Ensuring that the equipment is cleaned and decontaminated before it is removed from the laboratory (see section 6).

Research Infrastructure Strategy and Planning (RISP) team is responsible for:

- Managing asset approvals for the transfer/donation or disposal of Class 3B/4 lasers and/or equipment containing embedded Class 3B/4 laser systems;
- Informing Research Asset Management (RAM) team that an asset needs to be transferred/disposed;
- Keeping the LSO informed of the transfer/disposal of a Class 3B/4 laser or equipment containing a Class 3B/4 laser system.

Research Asset Management (RAM) team is responsible for:

- Informing LEM if an equipment is being disposed as scrap so that LEM can reclaim spare parts;
- Organizing the transfer of the equipment from the laboratory to the required location (e.g. new laboratory, surplus, etc.);
- Updating the KAUST equipment inventory system for asset equipment;
- Coordinate the packing of the laser system with the logistic team if the laser is sold and the buyer has asked KAUST to prepare the laser.

The RST/LSO is responsible for:

- Sharing the inventory list of Class 3B/4 lasers and equipment containing embedded Class 3B/4 laser systems with the RISP team and LEM team;
- Verifying that the laser systems have been cleaned and decontaminated before they can be transferred;
- Informing RISP and RAM when an asset is ready to be picked-up;
- Ensuring that all transfers/donations or disposals of Class 3B/4 lasers and/or equipment containing embedded Class 3B/4 laser systems are compliant with the ANSI standards and this procedure;
- Keeping an up to date version of the laser inventory.

LEM is responsible for:

- Assisting the PI/Center Director and LSO with the decommissioning of the laser system; i.e. provide advice on the cleaning, assist with the dismantling of a laser head, and any other technical skills required;
- Collecting any useful equipment and spare parts from laser systems that will be sent to scrap.

6. Equipment Preparation

It is the responsibility of the PI or Center Director to ensure that any transferred/donated or disposed (for scrap or sale) laser system is decommissioned appropriately. Decommissioning of a laser system entails: cleaning and decontaminating the laser system, disconnecting all electrical equipment and ensuring the laser manuals are kept with the laser system before it is moved out of the lab. It is the responsibility of the PI or Center Director to ensure that all chemical lines (e.g. dye lasers), gas lines (e.g. excimer lasers), chambers, etc. have been cleaned/flushed and hazardous waste disposed appropriately. Finally, before the equipment is transferred/donated or disposed, the RST/LSO must be contacted to verify the equipment for decontamination verification (radiological, biological, chemical, etc.).

As per the RST Lab Decommissioning Document, if this procedure cannot be followed (e.g. PI already left KAUST) it is the responsibility of the Dean's Office (for individual PI) or Center Director (if the PI belongs to a Center) to ensure compliance to this procedure.

7. Internal transfers

Internal transfer can happen in two different ways:

- Transfer to a new PI/Center Director;
- Donation to Surplus via RISP.

7.1 Transfer to another PI

Any equipment can be transferred to a new or different PI/Center Director and the procedure is detailed below:

Step 1: The current PI/Center Director owning the laser system must complete the Asset Transfer Form.

Step 2: The RISP team informs the RAM team and LSO as well as contacts the PI/Center Director to manage/coordinate the transfer process as per the procedure (for more information please refer to Academic Space and Equipment Planning webpage).

Step 3: The PI/Center Director must ensure the laser system has been decommissioned (as detailed in Section 6) and inform the LSO and RISP via email when the laser system is ready to be transferred.

Step 4: The LSO arranges a visit of the laboratory to confirm that the laser system is ready for pick-up.

Step 5: The LSO visits the lab of the PI/Center Director receiving the laser system to ensure that all laser safety requirements are in place (e.g. warning light, safety interlocks, definition of the Laser Controlled Area, etc.). If additional laser safety measures are required, the new PI/Core Lab Director may need to raise a Lab Modification Request.

Step 6: The LSO informs the RISP and RAM team and copy the PI/Center Director as well as the new PI/Center Director that the laser system is ready to be moved.

Step 7: RAM team arranges the transfer of the laser system.

Step 8: The PI/Center Director receiving the laser system must complete the laser registration form as per the procedure detailed in the Laser Safety Manual.

Step 9: The LSO checks that the laboratory has all the safety features required for the use of the device, registers the laser system and updates the laser inventory.

Figure 1 illustrate an overview of the transfer to another PI process.

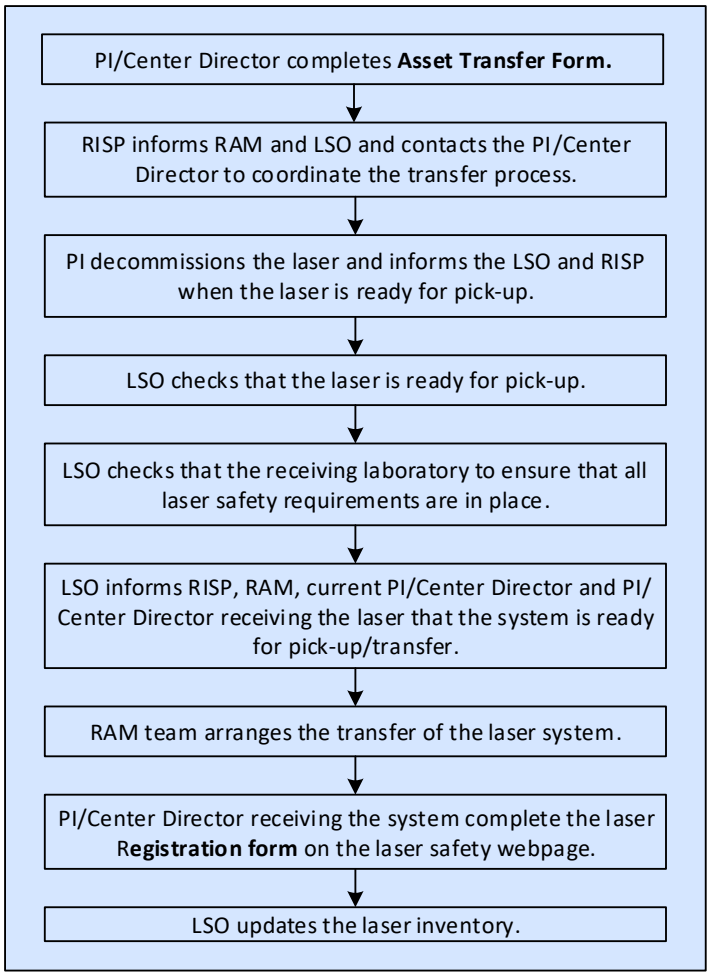

Figure 1. Process for the direct transfer of asset to another PI.

7.2 Donation to Surplus

Only functional equipment can also be transferred/donated to Surplus (the value of the equipment does not matter).

Step 1: The current PI/Center Director owning the laser system must complete the online Research Surplus Equipment Donation Form or Asset Disposal Form according to the instructions on the form.

Step 2: The RISP team informs the LSO and RAM, and contacts the PI/Center Director to manage/coordinate the donation process as per the procedure (for more information please refer to Academic Space and Equipment Planning webpage).

Step 3: The PI/Center Director must ensure that the laser system has been decommissioned (as detailed in Section 6) and informs the LSO and RISP when the laser system is ready to be transferred.

Step 4: The LSO contacts the PI/Center Director to arrange a visit of the laboratory to confirm that the laser system is ready for pick-up/transfer and informs the RISP and RAM teams.

Step 5: RAM team arranges the transfer of the laser system. Note that if the equipment is large in size, RAM team may need to leave the donated equipment in the current location even though its ownership is transferred to surplus. In this case the LSO must ensure that the equipment is locked out (i.e. not usable by people of the laboratory).

Step 6: The LSO updates the laser inventory.

The process for transferring an asset to surplus is detailed in Figure 2.

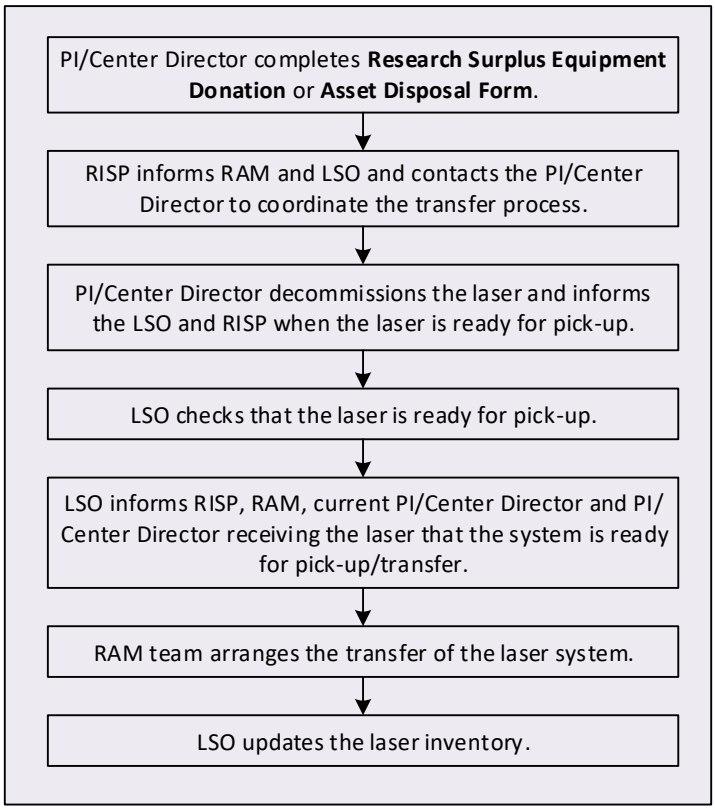

Figure 2. Process for the direct transfer of an asset to surplus.

8. Loan of a laser system

Loan of equipment refers to a temporary transfer of an equipment from one PI/department to another PI/department within KAUST research spaces.

The current PI/Center Director owning the laser system must complete the Asset Loan Form according to the instructions on the form. Then please follow step 2 – 9 from section 7.1.

The process for lending an asset is detailed in Figure 3.

9. Disposal of laser system

Disposal of a laser system refers to:

- Laser system replacement (warranty replacement or upgrade);
- Sale;
- Disposal as scrap.

For all disposal, the PI/Center Director owning the laser system must follow the steps detailed below as for a transfer to surplus:

Step 1: The current PI/Center Director owning the laser system must complete the Asset Disposal Form according to the instructions on the form.

Step 2: The RISP team informs the RAM team and contacts the PI/Center Director to manage/coordinate the disposal process as per the procedure (for more information please refer to Academic Space and Equipment Planning webpage).

Step 3: The PI/Center Director must ensure the laser system has been decommissioned (as detailed in Section 6) and informs the LSO and RAM via email when the laser system is ready to be transferred.

Step 4: The LSO contacts the PI/Center Director to arrange a visit of the laboratory to confirm the laser system is ready for pick-up/transfer and informs the RISP and RAM teams.

Step 5: RAM team arranges the transfer of the laser system.

Step 6: The LSO updates the laser inventory.

Additional responsibilities depending on the type of disposal are detailed in the sections below.

9.1 Sale of Laser system

Sale as well as donation to Schools/Universities of Class 3B/4 lasers or equipment containing embedded Class 3B/4 laser system is possible. The sale process must be overseen by the Procurement Department and the steps described below must be followed after step 6 in the section above (section 9) are completed:

Step 1: RAM team sends a copy of the Asset Disposal Form completed and signed by the Vice President of Research (VPR) as well as the list of the equipment that will be sold to the contact person in procurement responsible for sale as well as the LSO.

Step 2: Procurement team prepares/updates the sale catalogue and sends a copy to the LSO for his/her review.

Step 3: The LSO reviews the sale catalogue and contacts the Procurement team to inform if Class 3B/4 lasers and/or equipment containing embedded Class 3B/4 laser systems are in the sale catalog. The LSO should also provide the requirements associated with the sale of the laser systems to the Procurement team (e.g. ensuring that the buyer has a designated Laser Safety Officer, or that the buyer will send a clearance letter indicating that they will be responsible for the piece of equipment, etc.).

Step 4: The Procurement team must inform the RAM team and the LSO once a buyer has been identified and the sale has been agreed.

Step 5: The LSO updates the laser inventory.

9.2 Laser system replacement

The University may be able to return the laser to the manufacturer that would:

- Accept the laser for recycling value or just as a service to the University;
- Accept the laser for disposal, refurbishment, useable components, or recycling;
- Accept the laser system as part of an upgrade agreement.

In this case, the replacement of the Class 3B/4 lasers or embedded Class 3B/4 laser systems can be made with provision that the equipment is decontaminated/cleaned (see section 6) and that it has been inspected by the LSO.

9.3 Scrap – Waste Management

Before a laser system is sent to scrap the following must be checked by RAM team:

- Obtain confirmation from the LSO/RST that all hazardous materials or any possible hazardous materials components have been removed and disposed of according to the Hazardous Waste Manual;
- Obtain confirmation from the PI/Center Director that the equipment has been decommissioned;
- Obtain confirmation from the LSO and/or LEM that the system has been disabled by cutting off the plug, the AC source cord or removed all means of activating the laser;
- Obtain confirmation from LEM that they have recovered all useful spare parts before the system is disposed;
- LSO and/or LEM must confirm that the secure key has been removed and the laser cavity has been destroyed (i.e. rendered inoperable).

Once all the previous checks have been completed, the equipment can be handed over to the Waste Management Team and the standard disposal process followed.

Document History

REV	DATE	PREPARED BY	DESCRIPTION
01	Mar. 2020	D. Darios	New document
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