Citizen Petition Cover Letter

May 2nd, 2024
Division of Dockets Management
U.S. Food and Drug Administration
5630 Fishers Lane, Room 1061
Rockville, MD 20852

Citizen Petition
Request to reclassify digital breast tomosynthesis / tomo digital mammography devices. (product code OTE)

To Whom It May Concern,
The undersigned ("petitioner") submits this petition under 21 CFR §10.25(a) and §10.30 to the US FDA. Specifically, we formally request that the FDA reclassify tomo digital mammography devices (product code OTE) to the same risk class and premarket submission type as Full Field digital mammography FFDM (product code MUE) devices. Tomo digital mammography devices are currently considered Class III and require a PMA submission. This is to request that tomo digital mammography devices be considered Class II and require a 510(k) submission.

This is reasonable because the risks and necessary evidence to provide a reasonable assurance of safety and effectiveness are similar between devices in product codes OTE and MUE, and the risk classification and requirements for MUE have been found sufficient. Therefore, in alignment with the least burdensome principle, the minimal controls necessary to provide a reasonable assurance of safety and effectiveness should be utilized, and those are the controls currently expected for product code MUE.

Please contact us if you have any questions or require additional information.

Thank you for your time and consideration.

Sincerely,

Signature 

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METALTRONICA

Action Requested

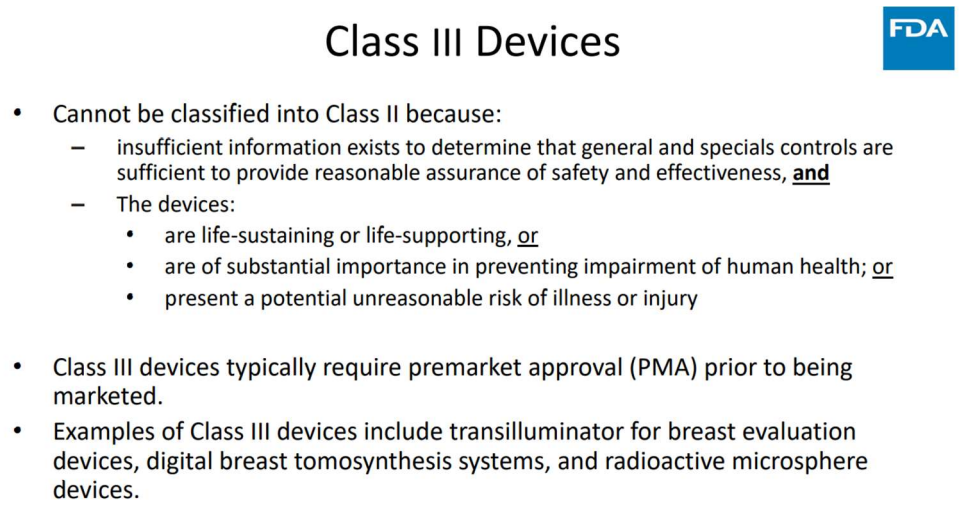
This petition concerns the request to include the tomo digital mammography (product code OTE) in the same risk class as the FFDM digital mammography (product code MUE). Specifically, the request is to reclassify this product from class III to class II and change the required premarket submission type from a PMA to a 510(k).

Statement of grounds--The factual and legal grounds for the petition, including all supporting material and information known to the petitioner that may be unfavorable to the petitioner's position.

Currently, digital mammography devices are strictly classified depending on whether they are 2D (FFDM) or 3D (tomosynthesis)

However:

1. Based on the following presentation by FDA https://www.fda.gov/media/173858/download and particularly the class III devices definition



We can reply on tomo mammo units (OTE):

1) Universally recognized harmonized standards and guidelines are available and applicable (IEC 60601-1, IEC 60601-2, IEC 60601-2-28, IEC 60601-1-3, IEC 60601-2-45, IEC62304, ISO14971) The same FDA guideline (https://www.fda.gov/medical-devices/guidance-documents-medical-devices-and-radiation-emitting-products/full-field-digital-mammography-system-class-ii-special-controls-guidance-industry-and-fda-staff) already available for 2D controls can be extended to 3D application by considering the same approach in the different anode/filter contexts for pre-clinical purposes.

Compared to the 2D application, the tomo application requires the addition of some specific special controls. Essentially, the following are required:

Image quality controls based on the Euref Tomo guide

(EUREF guidelines https://euref.org/download/euref-tomosynthesis-protocol-version-1-03/). The tomo controls are similar to 2D, with the same nomenclature but different anode and filter contexts and dosimetry. Among the controls, the only ones dedicated to use in the tomo are the "Z resolution" and “reconstructed images” (par.5).

Different calibrations

The calibrations are essentially linked to the type of detector suggested by the detector manufacturer. The detector used for the two techniques is the same, but for each application implementation, the requirements differ based on the average over different shots for different scanning angles.

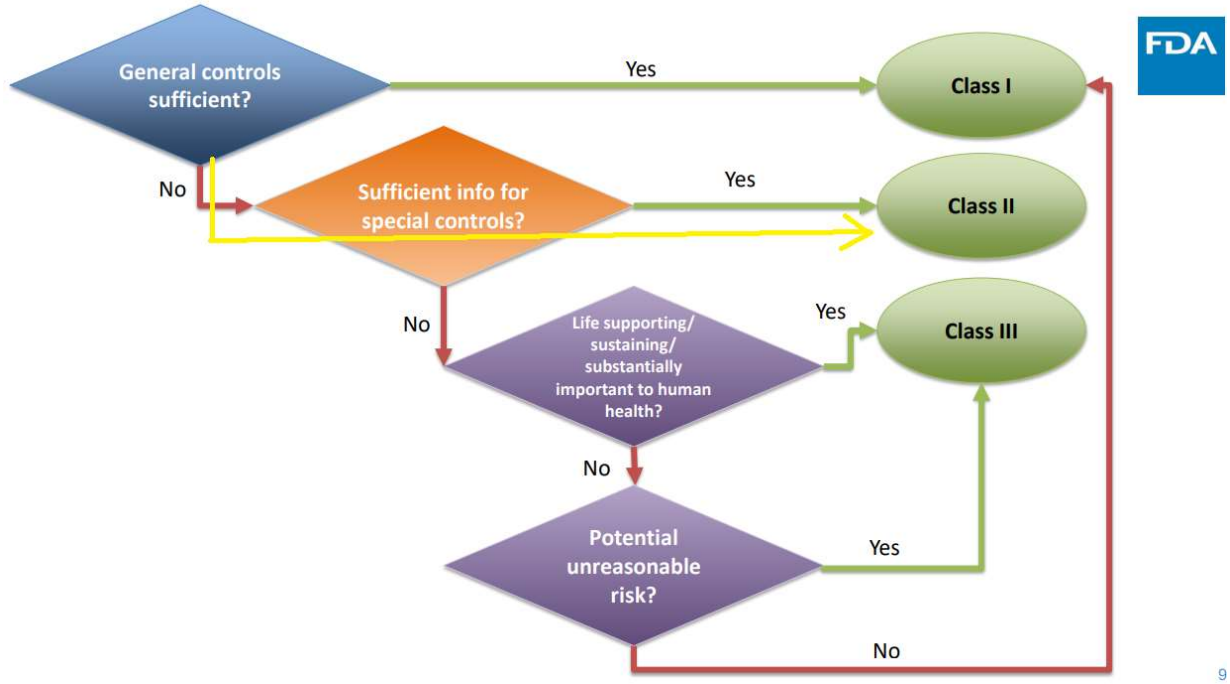
However, these checks are only extensions of the “special controls” already required for MUE products (the checks have the same name), so no additional dedicated controls are needed. These details do not seem to justify a different class for the category itself.

2a) The device is not intended to be life-sustaining or life-supporting.

2b) The device does not prevent impairments of human health.

2c) The risk of illness or injury is not unreasonable and is not greater than various class 2 devices that use ionizing radiation (FFDM mammo units, for instance)

The below “flow chart” leads directly to class 2 (see yellow arrow)



And additionally:

2. 3D is also widely used in screening protocols
   https://www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html

3. The first 3D was approved in 2011 (HOLOGIC), and after 13 years of presence on the market, the technique is well known, consolidated, and considered valid
   https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpma/pma.cfm?id=p080003

4. The technique's application method in tomosynthesis does not vary significantly from the various devices on the market, which often share a digital detector by the same manufacturer and similar processing SW. In other words, any of the devices in this product code (OTE) could be considered substantially equivalent. They could be valid for future devices to claim substantial equivalence.

5. Market surveillance demonstrates that the risks associated with the two technologies are equivalent, and in any case, the tomosynthesis technique's presence on the market has not led to unacceptable adverse events on patients from the perspective of risks and benefits.
   See below for some safety considerations based on adverse event analysis.

   An analysis of the adverse events reported in the last five years in https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfmaude/search.cfm

(from 1/4/2019 to 31/3/2024), respectively, for OTE (3D) and MUE (2D) category products, which were carried out to highlight the lack of significant differences in safety.

Of the 475 total events (288 for OTE and 187 for MUE), those (14 and 21, respectively) not linked to the two techniques (2D/3D) but to other applications (biopsy/dual-energy) were isolated and identified with NA (not applicable).

Of the remaining 440 events, 434 are technology-independent events.
The reason is given below: essentially, it is due to component failure (especially related to handling), which is common to both 2D and 3D use, and to the dangers universally known in the use of mammography in general (unintentional handling, compression, electric shock, entrapment, lack of adequate training, patient discomfort, etc.).

Both products (OTE and MUE) include electromechanical components for which electrical events or events due to movement or failure of the control components (foot pedals or mechanical switches) are specific to the type of products.

Most events on OTE compared to MUE are essentially related to the greater diffusion of tomosynthesis products, given that they are found in all the most economically developed countries, such as the United States. Furthermore, to date, most OTE category products also allow the application of the 2D technique (MUE), which remains unique only for dated products installed for a long time or used in limited situations (small clinical centers, mobile vehicles, etc.)

Impact on 2D/3D		OTE (3D)	MUE (2D)	Total
NA	Total (not 2d/3d related)	14	21	35
NO	Image quality procedure	1	4	
	Electrical shock	6	2	
	Entrapment	1	1	
	Compression	0	2	
	Failure (switches)	162	95	
	Failure (generic)	2	1	
	Failure (mechanical)	66	41	
	Failure (x-ray shields)	16	9	
	It is not related to the mammo unit	7	4	
	Unintended movements	4	5	
	Other	1	0	
	Use error	3	1	
	TOTAL (NO impact)	269	165	434
YES	Total (yes impact)	5	1	6
	Total (adverse event)	288	187	475

The remaining 6 (YES) are the only events dependent on the use of the 3D or the 2D technique: Two, because the protocols had not been extended to 3D (Please see above for potential special controls extended to tomo), the other 4 cases are linked to vibrations and patient harm during the tomo movement. Tomo movement in this technique is more critical because the compression during the exam lasts longer; however, it is a known and considered risk. Further, the overall prevalence is (4 cases out of 475), and multiple cases appear to be linked to the same mammogram and probably the same event (report number 1220984); therefore, it is statistically less significant.

6. Throughout the rest of the world, and specifically in Europe and South America, the two techniques/device categories have the same risk class (IIb) and the same EMDN category (Z11030202), and the approval process considers them to belong to the same device family/submission.

7. Comparative studies have demonstrated greater effectiveness of the tomo with similar examination protocols and without further impacts on the patient, therefore highlighting an equivalent risk
https://pubmed.ncbi.nlm.nih.gov/32068009/
https://ejrnm.springeropen.com/articles/10.1186/s43055-021-00421-4

8. Similar technologies (RMI, FFDM) initially entered with the PMA process were then declassified to class II after the following rollout period:

technique	Product code	First PMA	First 510K	ROLL OUT	Notes
MRI	LNH	1984	1988	Four years	https://www.fda.gov/radiation-emitting-products/mri-magnetic-resonance-imaging/mri-information-industry
FFDM	MUE	2006	2011	Five years	NA

Other similar techniques have been considered class II since 1977.

Technique	Product Code	First 510k	Notes
US	IYN	1978	https://www.fda.gov/media/71100/download
PET	KPS	1977	NA

Conclusions

On the material basis of the above information, there is no apparent difference in the safety or effectiveness of devices in product codes OTE and MUE. Therefore, there is no reason that they should be treated significantly differently from a regulatory risk or submission standpoint. Devices included in product code OTE can be adequately controlled to provide reasonable assurance of safety and effectiveness using general plus special controls, which can be considered moderate risk Class II devices, and the least burdensome review process would be using a 510(k) rather than a PMA. Additionally, allowing this change in the regulatory classification and marketing submission will encourage competition, potentially lowering overall costs and aligning with the least burdensome approach for both the industry and the FDA. Therefore, it is appropriate to reclassify product code OTE.

Environmental impact

This petition is exempt from an environmental impact per categorical exclusions in 21 CFR §25.30(h). To the applicant's knowledge, no extraordinary circumstances exist. Therefore, no environmental assessment is required.

However, Metaltronica notes that any environmental impact is expected to be positive. A single physical mammography unit can include both tomo digital mammography (product code OTE) and FFDM digital mammography (product code MUE) capabilities, controlled simply by different software. The potential for having fewer machines reduces environmental impact for both initial purchase, overall dimensions and material, and continued maintenance.

Economic impact

This petition is not expected to require a formal economic impact assessment. Economic impact information will be submitted upon the commissioner's request in accordance with 21 CFR §10.30(b).

However, Metaltronica notes that any economic impact is expected to be positive and may reduce patient costs.

From the FDA standpoint, the time and resources needed to review a 510(k) are significantly lower than those required to review a PMA, including the need not to conduct an on-site pre-approval inspection. Therefore, the FDA would incur a lower cost.

From the manufacturer's standpoint, a reduced level of testing, especially clinical testing, is usually necessary to support the safety and effectiveness of a device in a 510(k) compared to a PMA. Therefore, there would be a lower cost to the industry.

From the user standpoint, a single physical mammography unit can include both tomo digital mammography (product code OTE) and FFDM digital mammography (product code MUE) capabilities, controlled simply by different software. The potential for having fewer machines reduces initial costs (as a single hardware cost), reduces footprint for storage and use, and reduces indirect costs as there is a need to maintain only a single device instead of two. Therefore, there would be a lower cost to users.

Certification Statement

The undersigned certifies that, to the best knowledge and belief of the undersigned, this petition includes all information and views on which the petition relies and that it includes representative data and information known to the petition which are unfavorable to the petition."

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