Eckert & Ziegler
BEBIG

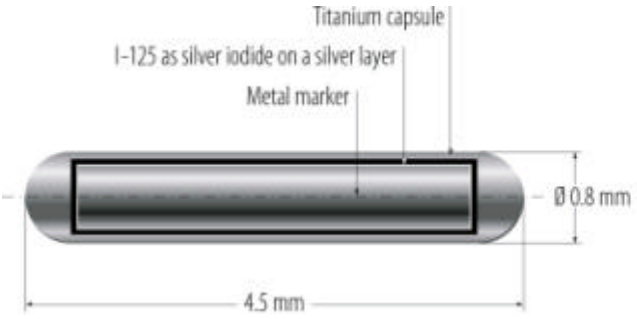
New IsoSeed® I25.S17

Why a new seed?

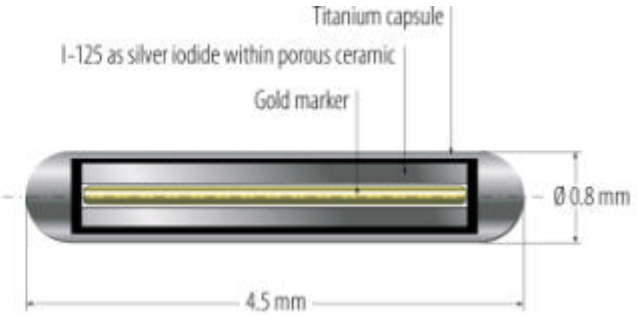
The current I25.S06 seed was developed to support an implantation technique which uses ultrasound imaging only. Therefore the X-ray marker was optimised for artefact free CT imaging to reduce post planning efforts. As a consequence of this I25.S06 shows lower contrast in fluoroscopy.
Strand user quite often use fluoroscopy for depth control instead of longitudinal ultrasound. The new IsoSeed® I25.S17 is the perfect solution for their method and allows them to use our innovative IsoCord® system. People implanting loose seeds benefit also from the improved X-ray visibility of I25.S17.

What is different?

We replaced the thin Gold marker of the old IsoSeed® I25.S06 by a massive marker made of Molybdenum. This Molybdenum marker has a Silver layer serving as carrier for the radioactive ^{125}I atoms, which are bound as Silver Iodide on that layer.



New I25.S17 seed



I25.S06 seed

The new seed design causes a change of the seed characteristics, i.e. dosimetry data and calibration factor. A paper on the new dosimetry data is accepted by Medical Physics to be published soon.

For VariSeed und PSID parameter data files for I25.S17 are already available.

Imaging Characteristics

The massive, full length marker of the new seed provides an excellent contrast in X-ray imaging. The following samples of fluoroscopic and X-ray images speak for themselves.

Fluoroscopy

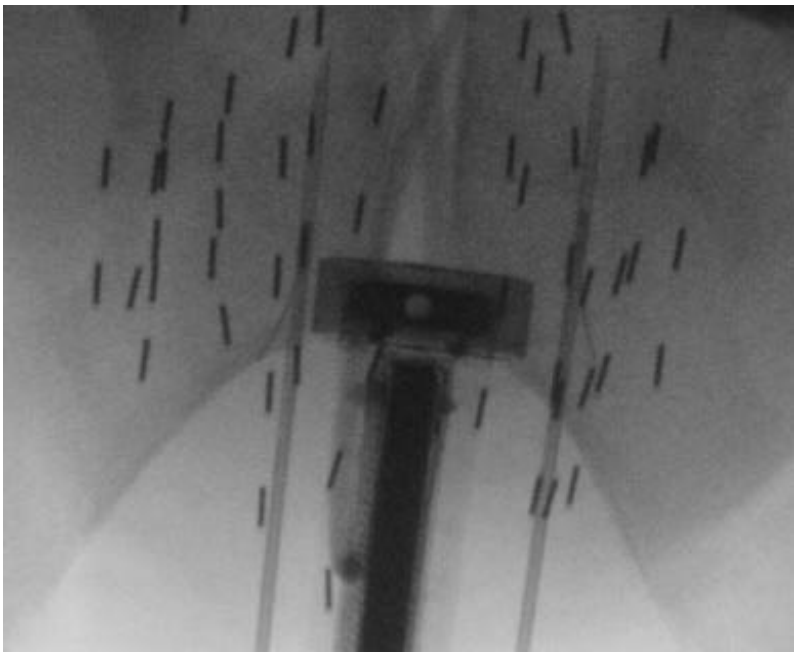


Image by Dres. Henkel & Kahmann, Berlin

Besides the seeds the ultrasound probe and the fixation needles can be seen on the image. Even beneath the fixation needles and close to the probe the seeds can be clearly identified.

X-ray Imaging

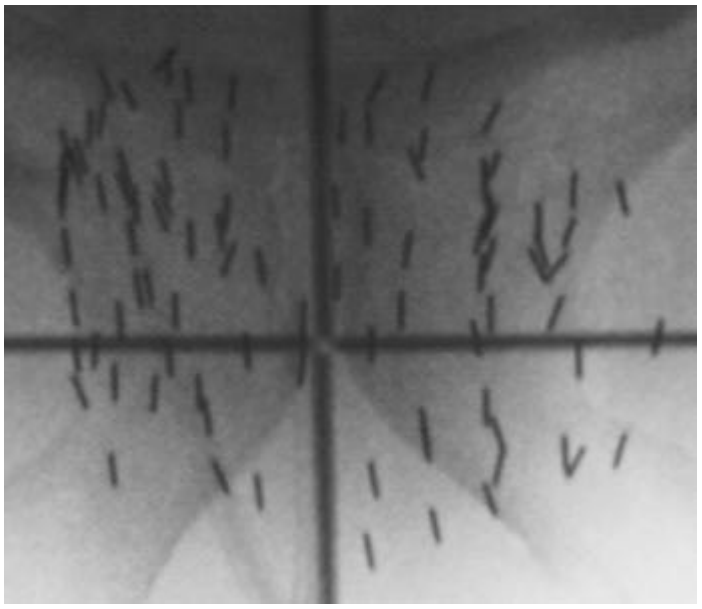
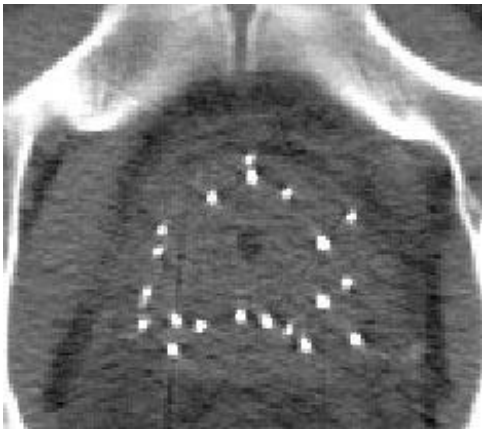


Image by Priv. Doz. Dr. Koch, Potsdam

This image shows a loose seeds implant. It was taken with an X-ray device mounted at the OR table - the new seeds are perfect visible.

CT Imaging

In CT imaging the massive marker of S17 causes more artefacts than the old S06 seed. Using a Molybdenum marker instead of a Silver marker for the new seed is an acceptable compromise between X-ray visibility and CT-artefact freedom, so that the artefacts on CT images can be handled easily.



Ultrasound Imaging

The ultrasound imaging characteristics are mainly determined by the surface of the seed or strand. As the same capsule is used for the new seed as well, S17 loose seeds and also IsoCord® strands continue to provide superior visibility on ultrasound images.

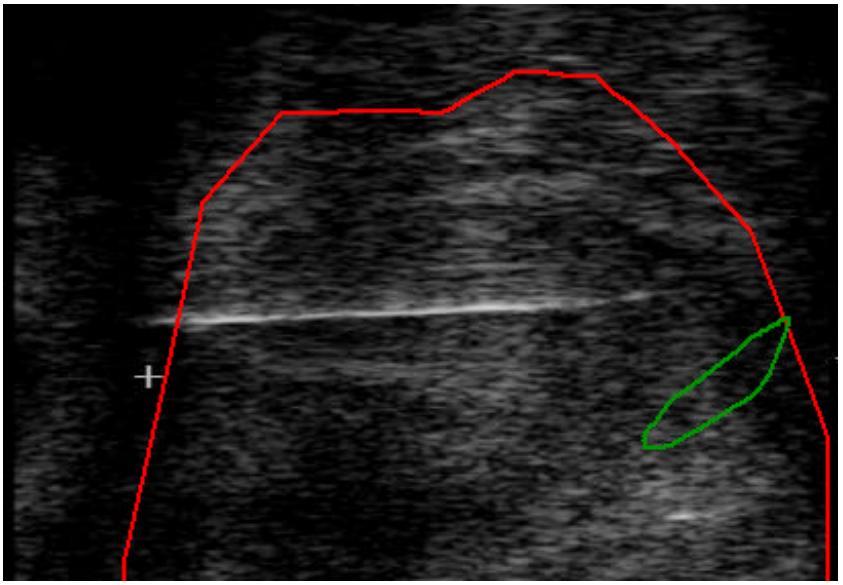
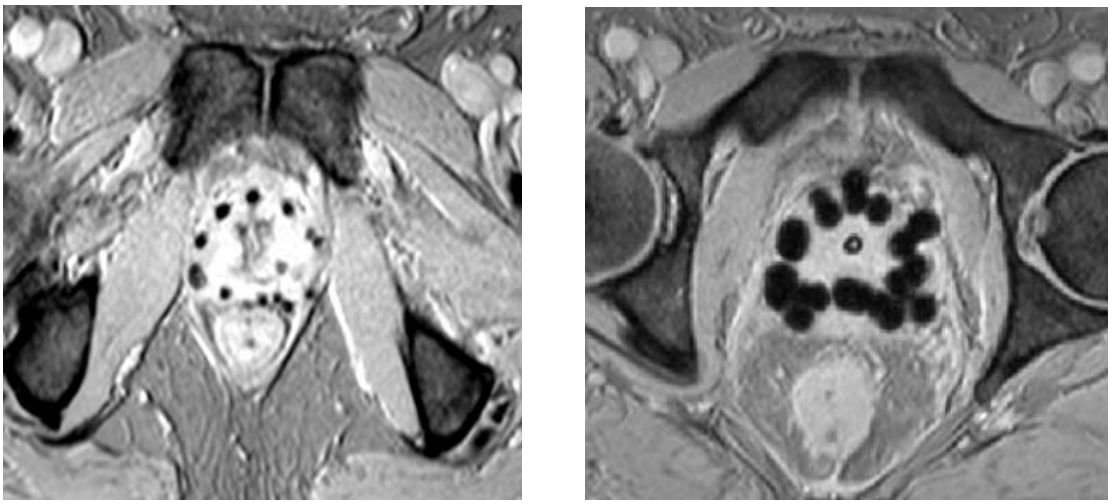


Image by Dr. Maurer, Leverkusen

This image shows an IsoCord® strand with I25.S17 seeds just placed inside the Prostate using the longitudinal mode of an Aloka ultrasound device.

MR Imaging

Tests done at the Eberhard Karls University in Tuebingen approve I25.S17 to be fully MRI compatible. Moreover these tests have shown, that S17 can serve as an MRI marker. This unique feature opens new perspectives for the post planning, since it might be possible to do post planning using MRI data only.



MR images using a FFE sequence by Dr. Maurer, Leverkusen: The left picture shows an IsoCord® implant with the old S06 seeds, the right one also an IsoCord® implant with the new S17 seeds.

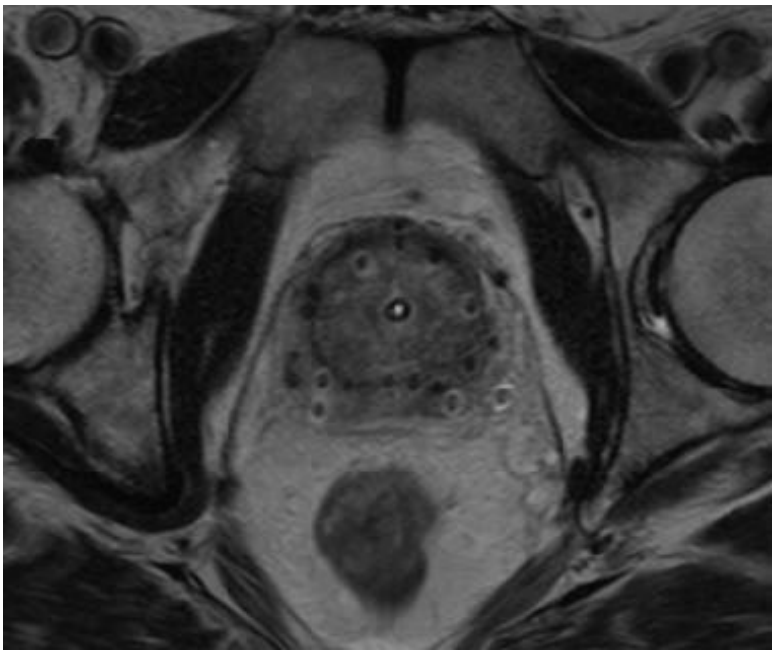


Image by Dr. Maurer, Leverkusen

On a standard T2 weighted Turbo Spin Echo sequence the S17 seeds show a brighter halo around the dark centre which helps to discriminate them clearly from vessels.

Order Information

IsoSeed® / IsoCord® Activity Classes

Class Number	Air kerma in µGy m²/h	Apparent activity in mCi	Apparent activity in MBq	Max. number of seeds per magazine
1	0,357 – 0,386	0,281 – 0,304	10,38 – 11,26	75
2	0,387 – 0,419	0,305 – 0,330	11,27 – 12,22	75
3	0,420 – 0,455	0,331 – 0,358	12,23 – 13,26	75
4	0,456 – 0,493	0,359 – 0,388	13,27 – 14,37	75
5	0,494 – 0,535	0,389 – 0,421	14,38 – 15,59	75
6	0,536 – 0,581	0,422 – 0,457	15,60 – 16,92	75
7	0,582 – 0,630	0,458 – 0,496	16,93 – 18,37	75
8	0,631 – 0,683	0,497 – 0,538	18,38 – 19,92	75
9	0,684 – 0,742	0,539 – 0,584	19,93 – 21,62	75
10	0,743 – 0,805	0,585 – 0,634	21,63 – 23,47	70
11	0,806 – 0,874	0,635 – 0,688	23,48 – 25,47	65*
12	0,875 – 0,948	0,689 – 0,746	25,48 – 27,62	60*
13	0,949 – 1,028	0,747 – 0,809	27,63 – 29,95	55*
14	1,029 – 1,115	0,810 – 0,878	29,96 – 32,50	50*

*) The number of seeds per magazine is limited by the limit value for excepted packaging shipments.

The activity of IsoSeed® / IsoCord® decreases by one class every week. Reference day for the declaration of the certified apparent activity is always a Monday.

Ordering Numbers

IsoSeed® loose seeds	I25.S17 SL
IsoSeed® in Mick® Magazine	I25.S17 SM
IsoCord®	I25.S171

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