# First detections concerning the use of DIGITAL MARKETS VERION system on dealing with astigmatism during phacoemulsification.

P. Bournas A. Pissarakis D. Kanellas,
K.Pavlakis, P. Minakakis, Thr. Pashalidis

General National Hospital Piraeus Greece

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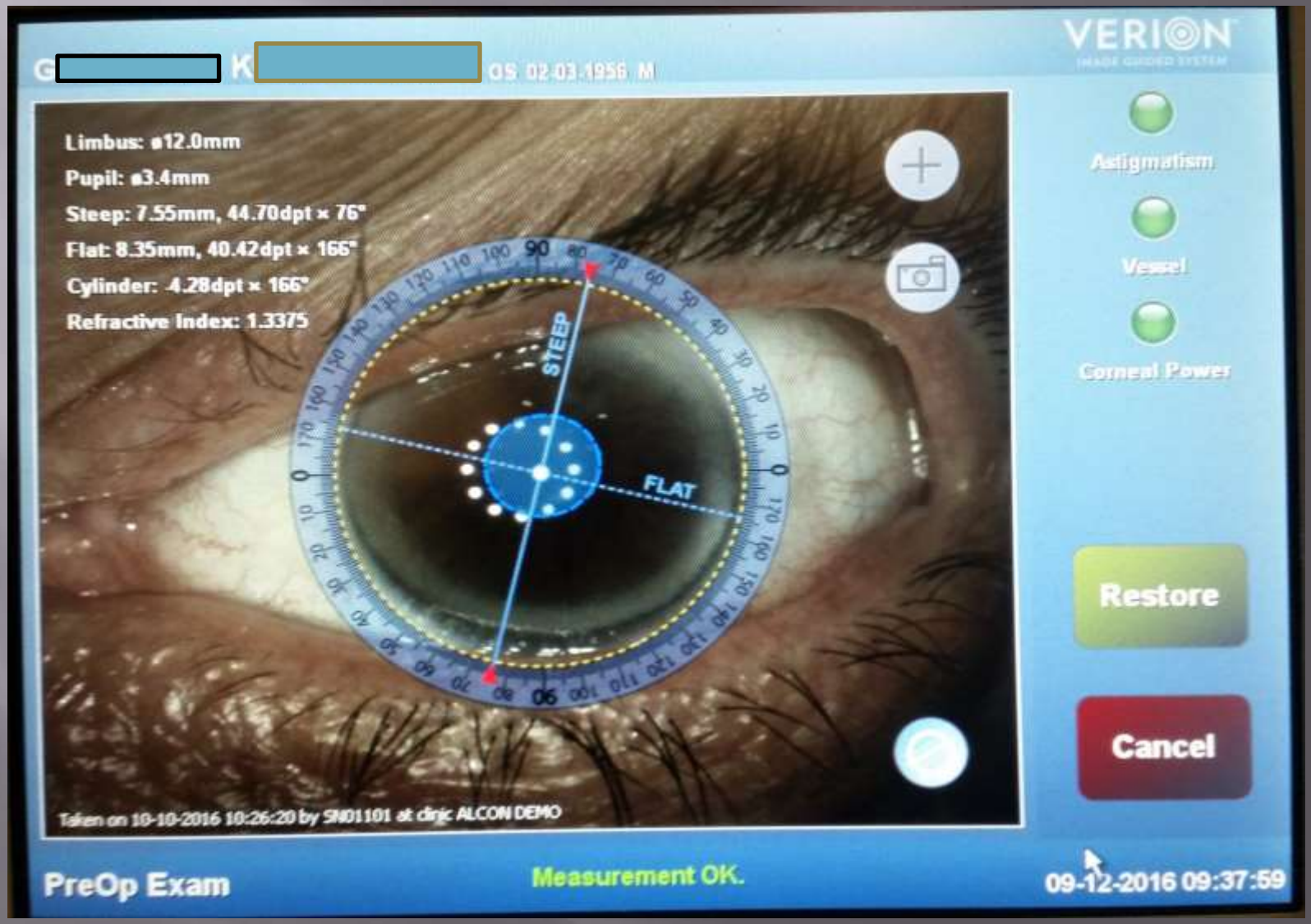
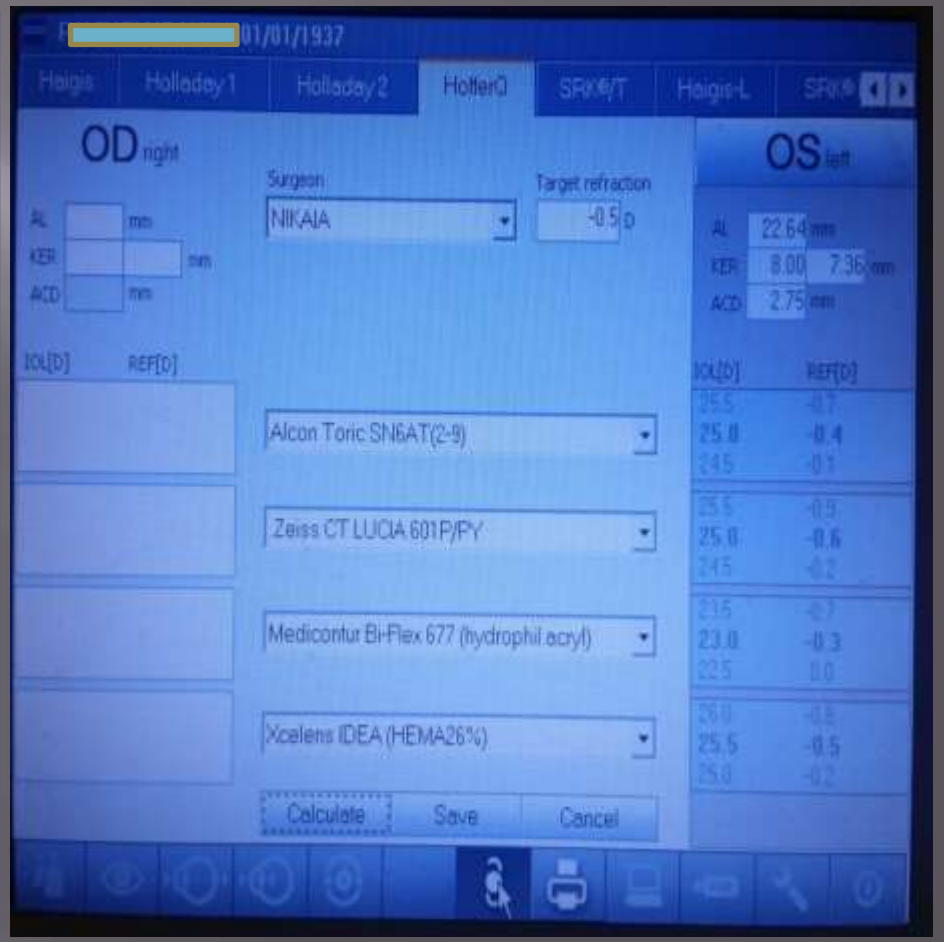
VERION computer-assisted surgery system (ALCON) is a new system of multiple abilities and applications. One of those is the safe and accurate placement of the toric Intra Ocular Lenses. Our study is based on this particular ability. A respective system is the CALLISTO (Zeiss).

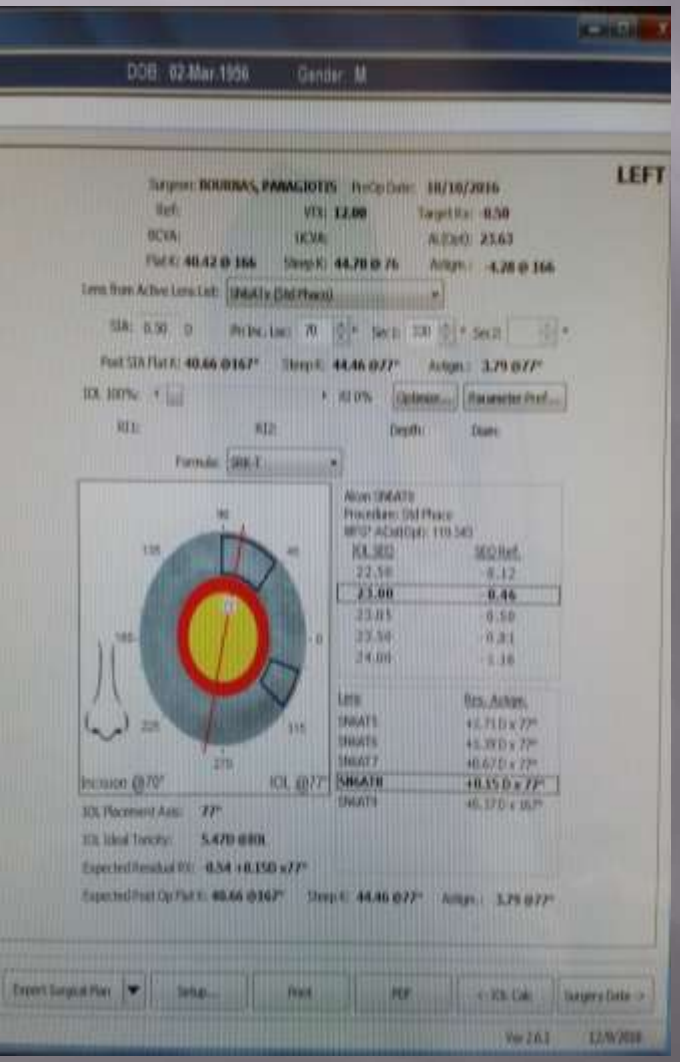


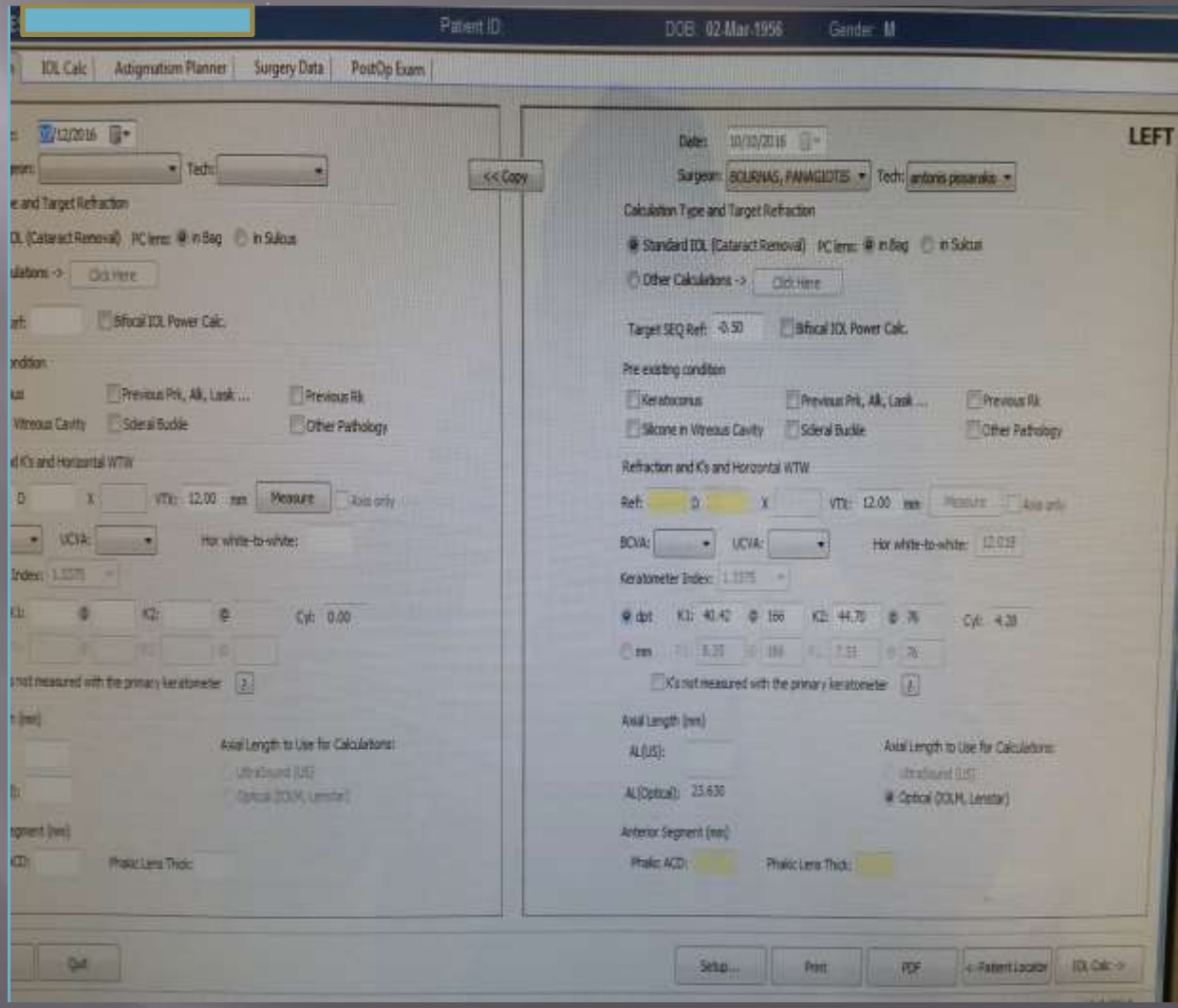
Before the introduction of Verion system we were placing toric IOLs by the following procedure: Survey and data's collection from the IOL master , sending them to our collaborator firm , along with some other data (surgeon's position , incision size (2.4 or 2.75mm) , pursued correction etc). After data's processing , they sent us the proper lens and specify the insertion axis (e.x 164° ).

On the surgery's day we mark the insertion axis using the op toric marker.

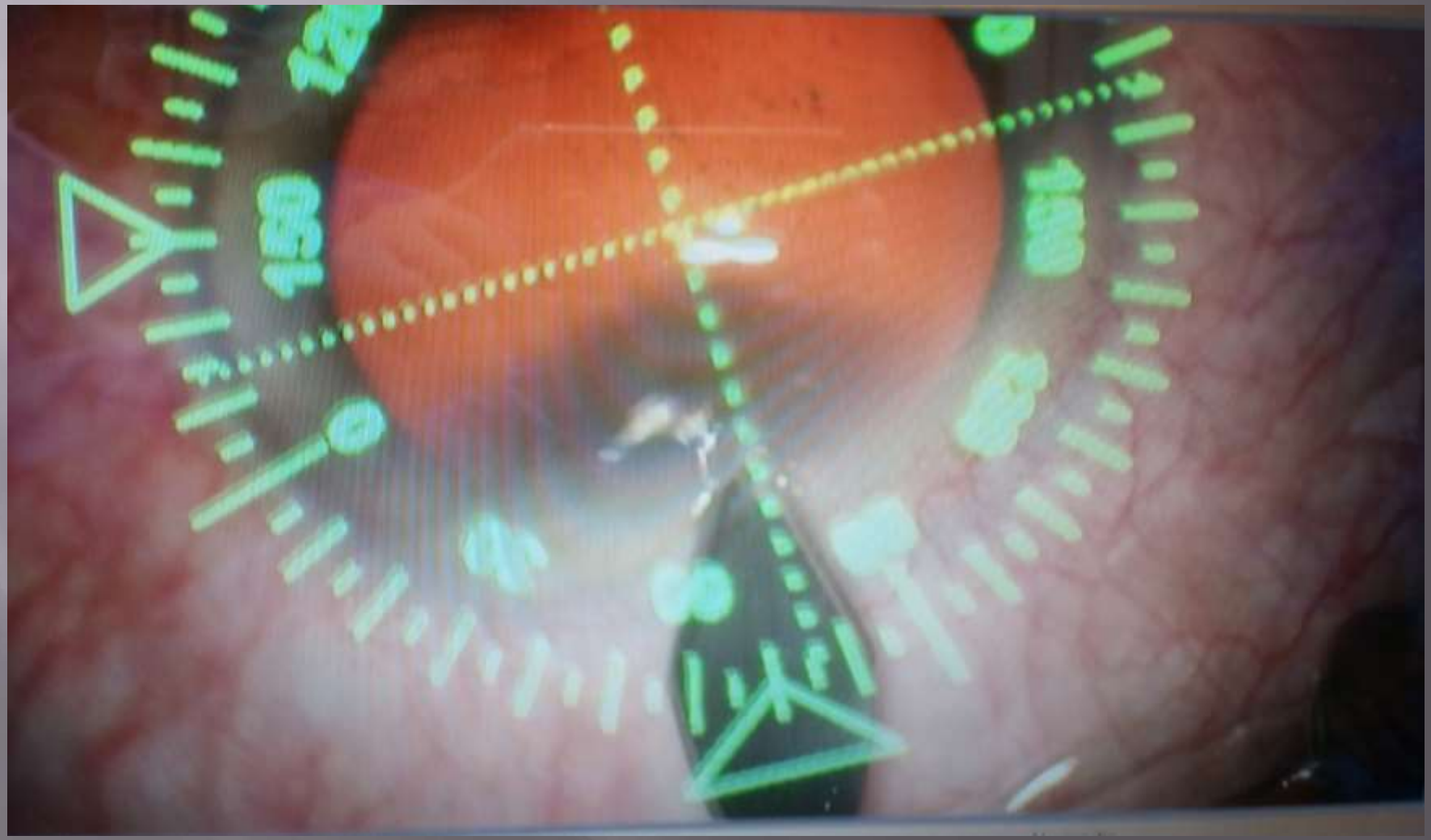
Now with the use of the new system , the patient, after his IOL master measurements, is been examined to Verion where all of the data are recorded in detail. The lens and the insertion axis are defined (surgery plan).



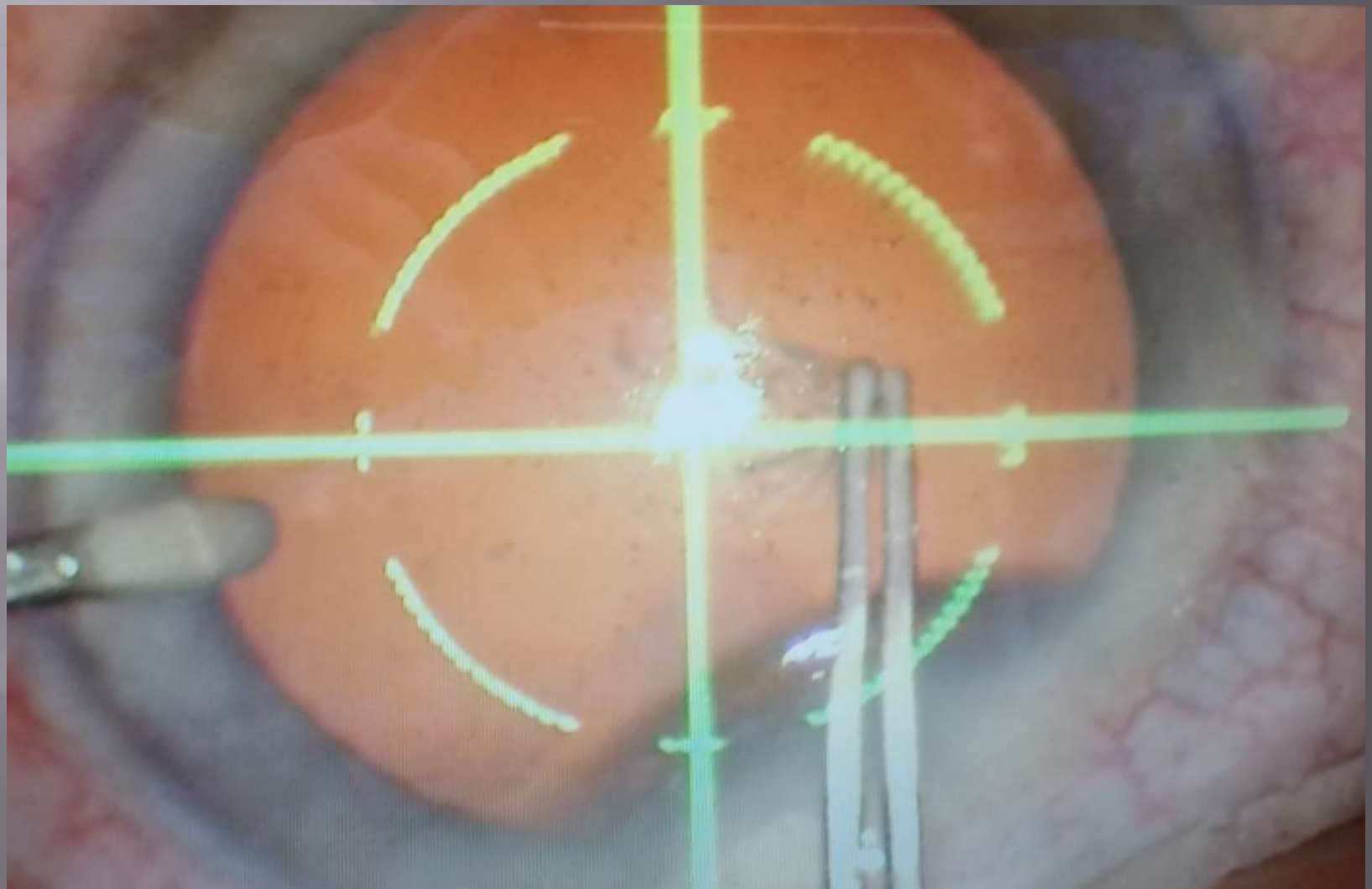



# All data are transferred to the digital unit of the microscope with a memory stick.

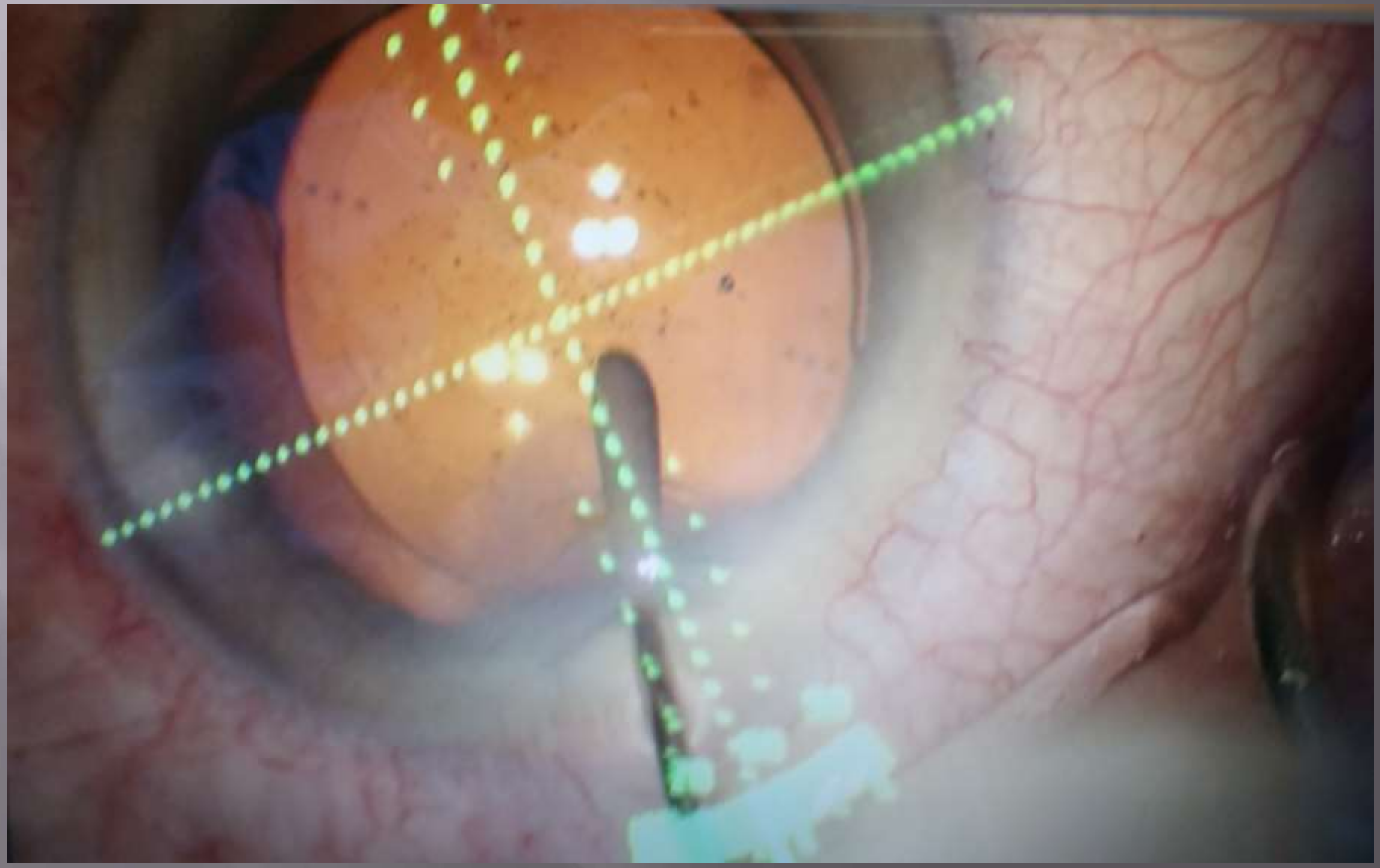
By the beginning of the operation the surgeon has in his disposal , directly on a display, the exact points of the main and side incisions , without being affected by the torsion due to the supinum position of the patient and the head's position. The exact incisions point is rather important because is related to the induced astigmatism.



Then the position and size of capsulorhexis is projected (5.5mm) , with the optical axis as the center , without being affected by the head's and eye's position and the uniformity and size of mydriasis. This is very important for the tild's avoidance and centration of the lens.

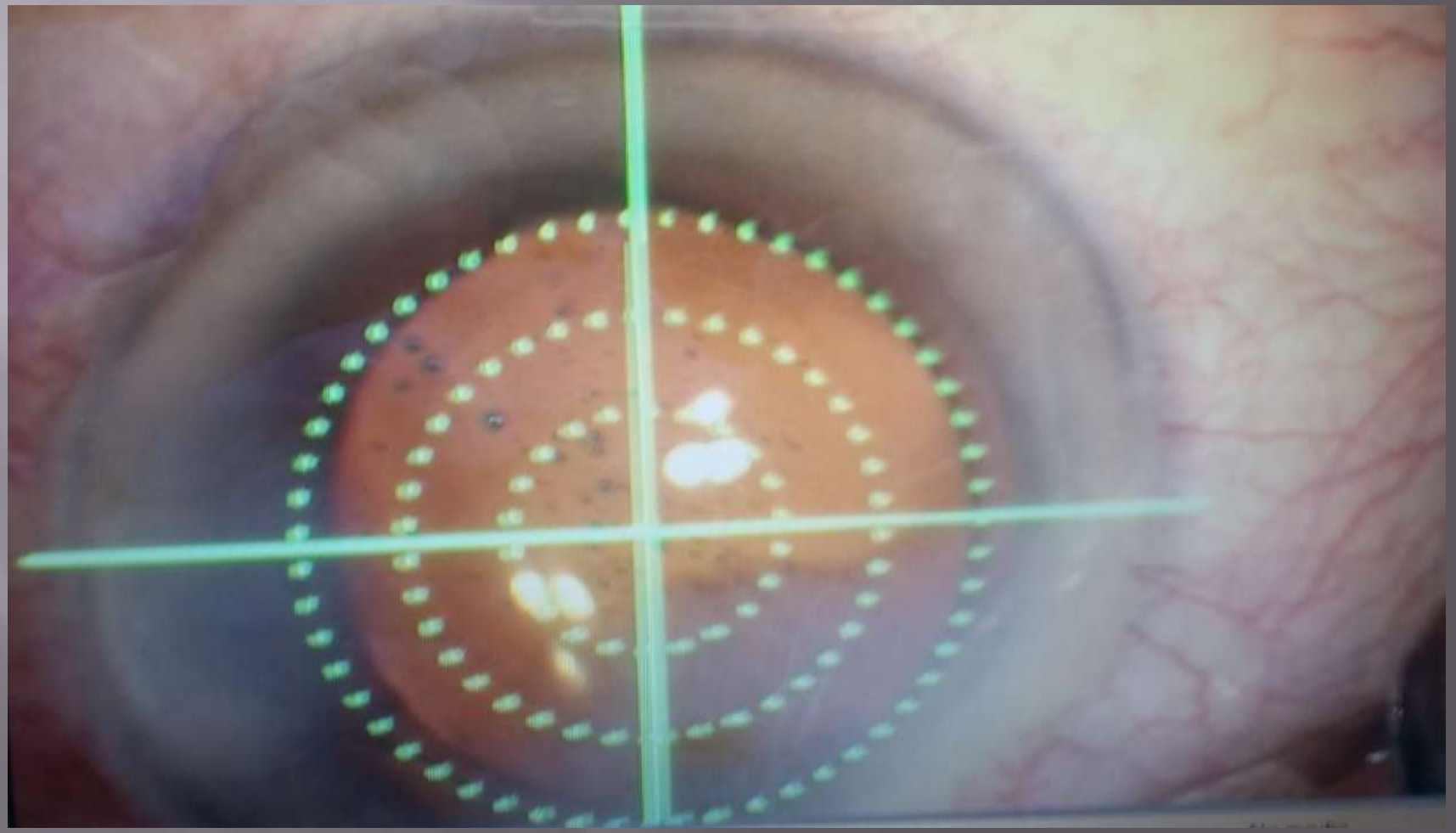


Subsequently, the toric's IOL insertion axis is projected on the cornea with absolute accuracy.



- A very important, worth to mention, point. A small axis diversion might mean a great loss to the pursued correction. (For $1^{o}$ axis inaccuracy, we lose 3.3% of the pursued correction.
- E.x: On a patient with 3 diopters astigmatism , if we end up with $10^{o}$ inaccuracy , which may happen , we ‘ll correct 2 and it will remain 1 diopter of astigmatism)

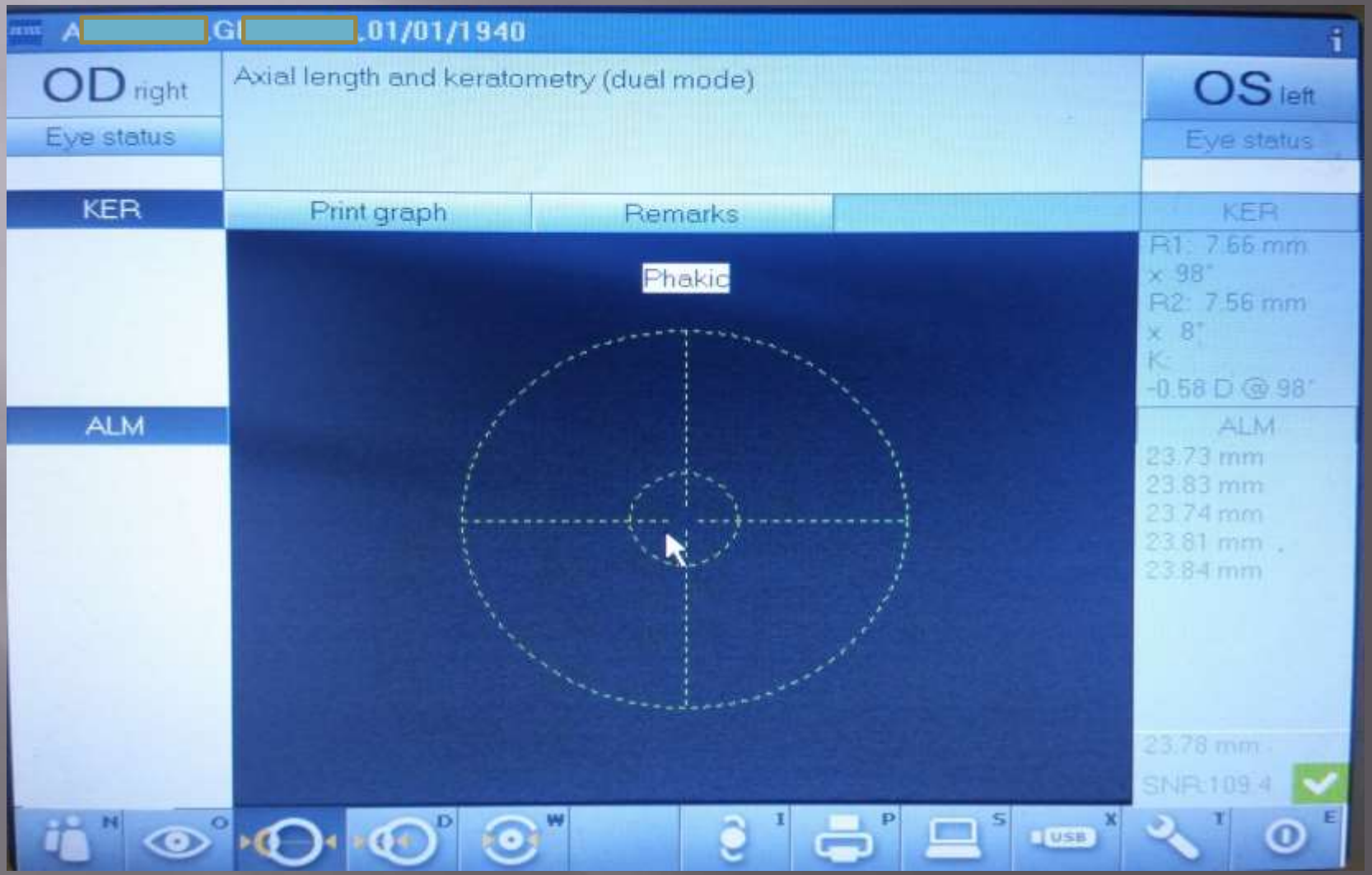
Finally , the system gives us the ability to centrate the lens , not where we think , but where the optical axis really is without being affected by factors that we mentioned before.



The operations' number performed by the assistance of Verion system is not so great for now , so we can have a statistically important depiction of the difference between before and after Verion's usage.

The results with or without Verion were very good. But if we want to exclude the luck factor or to achieve the perfect result , Verion system helps us significantly

It 's worth mentioning that by using Verion system we can decrease minor astigmatisms without implanting toric IOL , but through the main incision's adjustment and the induced astigmatism from it.



If for example on a patient with 1 diopter astigmatism , we introduce approximately 0.50 diopter of astigmatism , depending on the incision's position , the final astigmatism either will increase to 1.5 diopters or will decrease to 0.50.

Verion system using the data base that we create for each surgeon , can process the patient's data and determine the exact incision's position so we can achieve the best result.

Finally and due to Verion's ability to process the pre and post operative data , we create a particular data base for each surgeon so he can continuously improves his technique.

# Thank you