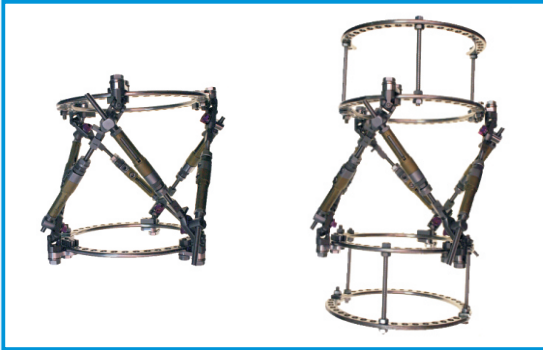# Ortho-SUV Frame ©
Art of Deformity Correction

We present new generation of external fixation - computer-assisted Ortho-SUV Frame

What does the Ortho-SUV Frame consist of?

The Ortho-SUV Frame consists of proximal and distal supports connected by six telescopic rods of special construction (strut). For additional rigidity stabilizing supports can be added.

How does Ortho-SUV Frame work?

Changing the length of one strut leads to translation of one support (and fixed to bone fragment) toward another in 3 dimensions.

Range of parameters taken from the frame and x-rays are input into the software attached to the frame.

In results the user receives a mathematically precise prescription on what value must be changed the length of each strut to translate one support toward another aimed to make deformity correction, fracture reduction.

Forget about multiple complex and laborious changes of hinges and reduction units in Ilizarov device and similar devices!

Correction of multi-planar deformity and fracture reduction using Ortho-SUV Frame is possible to make in "one stage".

Ortho-SUV Frame has the best reduction and fixation capabilities in comparison with its closest competitors (1, 2, 3).
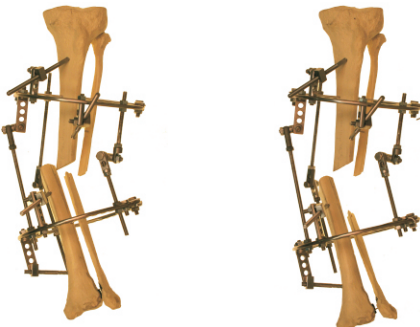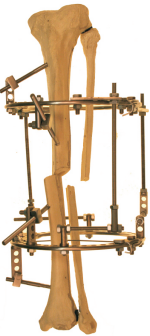

Step 1 - Lengthening
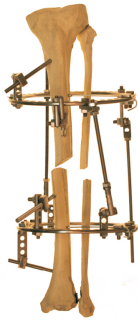
Step 2 – Angulation and translation in frontal plane

**Step 3 - Angulation and translation in sagittal plane**

Step 4 - Rotation

One step

Indications for Ortho-SUV Frame Use

Ortho-SUV Frame allows making deformity correction (4), bone fragments reduction and fixation in all the segments (shoulder, forearm, femur, tibia) at any level, except intra-articular damages. Two-level bone deformities, foot deformities, old subluxations in elbow, knee and ankle joints are also indications for Ortho-SUV Frame application.
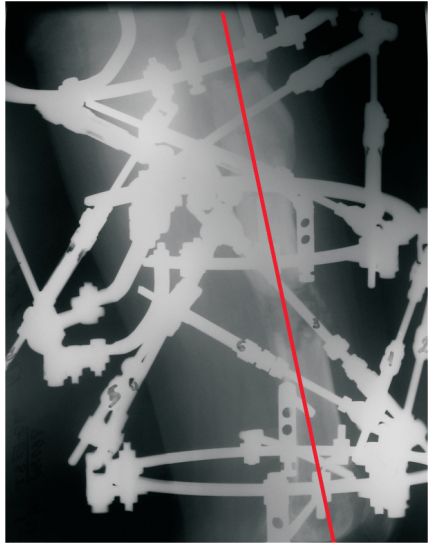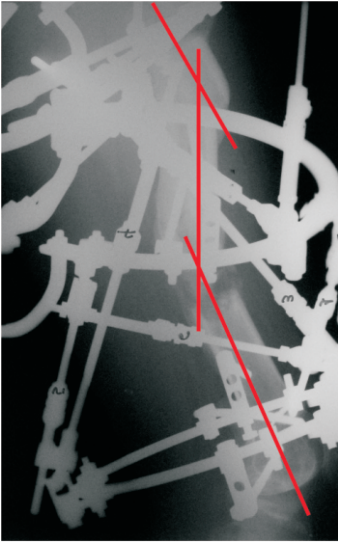

Simple Functional Assemblage

In Ortho-SUV frame supports of any shape (rings, 2/3 rings, half-rings, ellipses, angles etc.) of all the known ExFix devices (Ilizarov apparatus, OrthoFix, Taylor Spatial Frame, Synthes, Biomet, Stryker etc.). It decreases the price of Ortho-SUV technology application.

While using Ortho-SUV Frame orthogonal placement of the rings to the bone fragment axes is not necessary. Bone fragments can be located both in the external support centre, and eccentrically. It allows making osteosynthesis faster, decreasing the number of the x-rays.
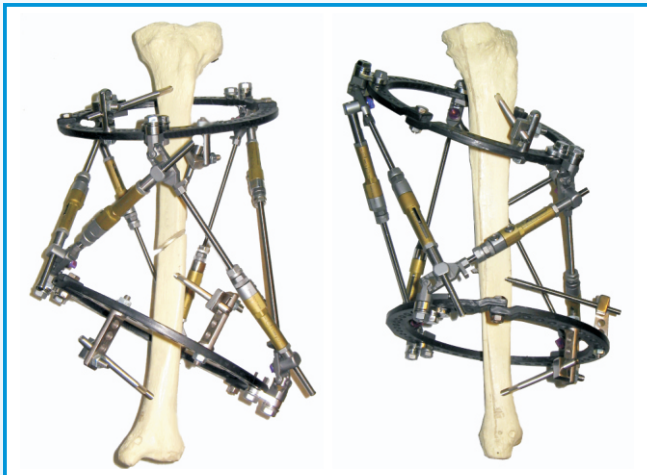
In Ortho-SUV Frame the places of struts fixation are not strictly determined – they are chosen optionally by the surgeon for easy frame assembling, decreasing surgery time.

Struts can be fixed to supports as well as at distance from them using Z-shaped plates. It simplifies the surgery and increases the functional opportunities of the device.

For insertion of transosseus elements in Ortho-SUV Frame only "Recommended positions" (5) are used. It allows preventing the damage of main nerves and vessels and decreasing the danger of transfixion stiffness and pin-tract infection.

**http://rniito.org/solomin/download/atlas-engl.zip**
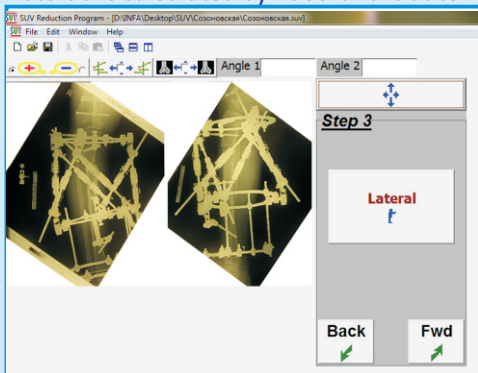
The convenient software
Ortho-SUV Frame software can be placed on any desk top or lap top computer. Internet connection is not necessary.

To complete the calculations in Ortho-SUV Frame software 12 steps (windows of the software) are necessary. It takes 15-20 minutes. The main steps have protection from user's error in input data. In Ortho-SUV Frame software is used only standard orthopedic terminology.
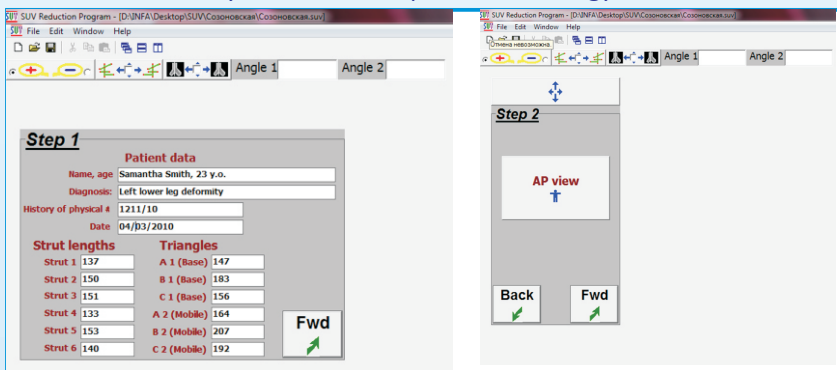
In comparison with competitive programs the quantity of parameters input manully in the software is lower by 31-36%.
All other parameters are calculated by he software automatically.

The competitive software don't have visualization or use the conventional visualization of bone fragments. The Ortho-SUV software "works" directly with the x-ray films input in the software. It significantly increases the quality of work, simplifies it and protects from user's error.
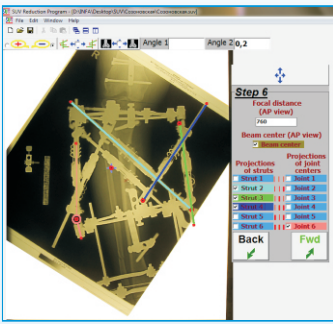
In competitive programs while making x-rays centration of the beam on reference support is essential. It can disfigure the picture of the deformity and make the calculations false. In Ortho-SUV software, standard x-rays, traditional for orthopedic examination, are used.

At the same time using of the strictly orthogonal projections is not obligatory. Ortho-SUV software will make proper calculations on the base of x-ray views made with the angle 45-80 degrees to each other. It simplifies x-ray examination.
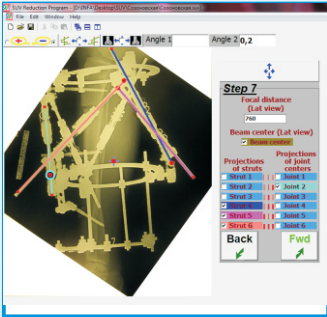
Ortho-SUV software has the panel of instruments maximally adapted for the standard work of orthopedic surgeon: tracing anatomic and mechanic axes of bone fragments, drawing skiagrams, planning and visualization of deformity correction.
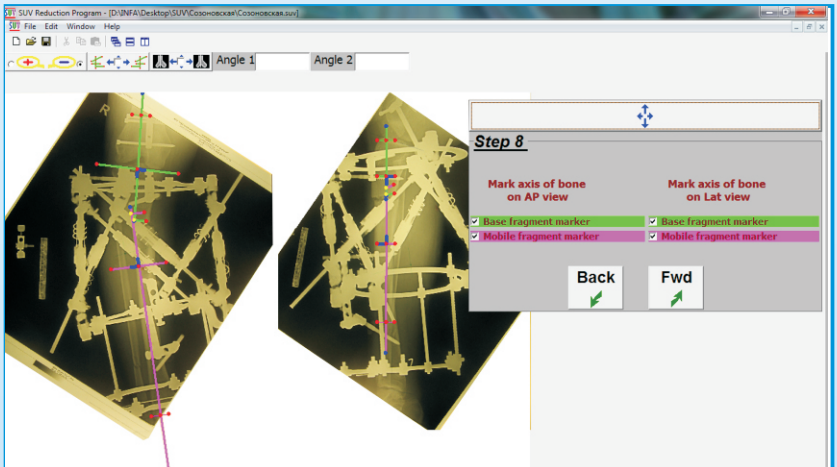
While calculation the number of days of deformity correction Ortho-SUV software automatically shut out the danger of tractional damage of main vessels and nerves, hypoplastic regenerate formation caused by the odd distraction rate.
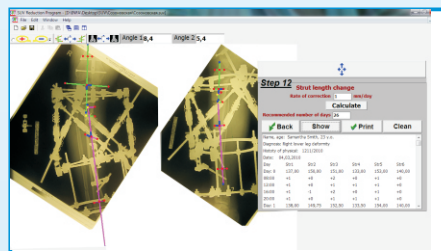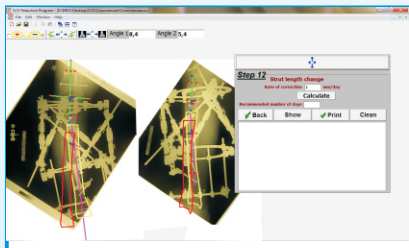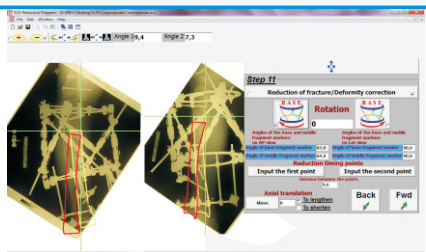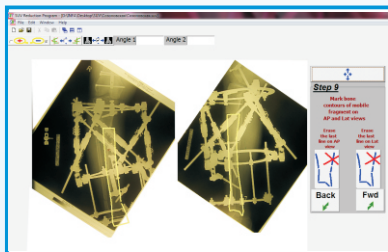
Completing work with Ortho-SUV software, orthopedist and patient receive precise prescription with hourly recommendations of each strut change for all the days of deformity correction and fracture reduction.

Use of Ortho-SUV Frame convenient for both the orthopedist and the patient
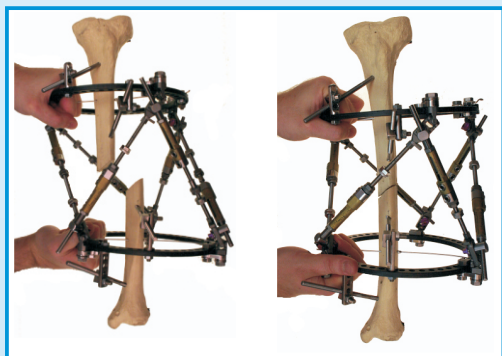
Struts of Ortho-SUV Frame have tw modes of work. In the "fast strut" mode it is easy to make a reduction f the fracture or a single-step deformity correction.

"Chronic deformity correction" mode should be chosen for gradual (0,25 x 4 times per day) deformity correction and limb lengthening.

Unlike the competative Frames, Ortho-SUV Frame has capability of dinamization for "regenerate training" according to Ilizarov method.

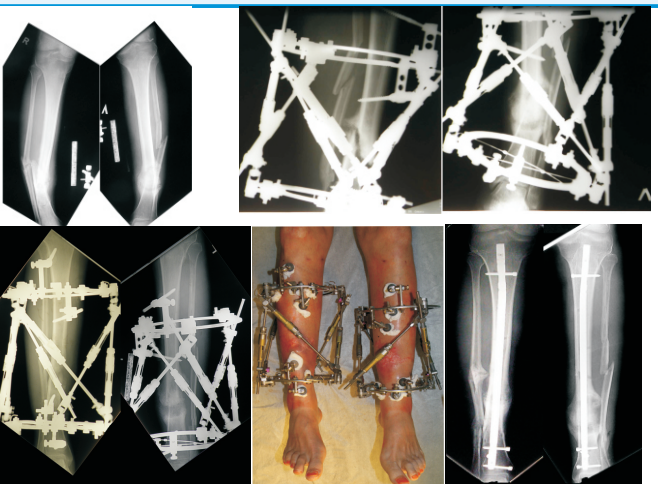Ortho-SUV Frame technology allows using the principles of "Module Transformation" (5). It allows reducing the bulkiness of the frame and increasing the comfort of treatment for the patient.

After precise deformity correction it's possible to shift on internal fixation

Additional information

User's Guide

How to use Ortho-SUV Frame in practice you can find here:

http:// www.ortho-suv.com

http:// www.ortho-suv.org

Where to buy Ortho-SUV Frame?

For all the questions concerning how to buy Ortho-SUV Frame, please contact:

"Ortho-SUV" Ltd. (executive director – Mikhail O. Pavlov)

Uchitelskaja Str. 23 A, St.-Petersburg, 195269, Russia

Tel. number: 7 (904) 5193989

E-mail: OrthoSUV@gmail.com

Training and courses

"Ortho-SUV" Ltd. provides training course: "Long bone deformity correction by software based Ortho-SUV Frame". It's standard four-days training after which you will easily apply Ortho-SUV for long bone deformity correction.

It is also possible to arrange Ortho-SUV training course in your hospital

All the questions about the courses provided by "Ortho-SUV" Ltd. address to: "Ortho-SUV" Ltd.(CEO Michael Pavlov)23 Uchitelskaja Str., St. Petersburg, 195269, Russia, Phone: +7(904) 646-9929; E-mail: OrthoSUV@gmail.com

http://ortho-suv.org

http://ortho-suv.com

Also there are 2 variants of training courses in R.R. Vreden Russian Research Institute of Traumatology and Orthopedics:

Certified 9-days course: "Basic principles of long bone deformity correction using software based Ortho-SUV Frame and Ilizarov method" (http://www.rniito.org/download/ortho-suv-Iliz-course-9-engl.pdf)

Certified intensive 4-days course: "Basic principles of long bone deformity correction using software based Ortho-SUV Frame" (http://www.rniito.org/download/ortho-suv-course-4-eng.pdf)

All the questions and suggestions about the courses provided by R.R. Vreden Russian Research Institute of Traumatology and Orthopedics address to the chief of Educational Department, Ass. professor Abdulkafar Abdullaevitch Shikhmagomedov by phone: +7-812-6708724, +7-921-9432042. E-mail: info@rniito.org and kafar90@mail.ru.

The scientific head of the courses: Prof. Leonid Nikolaevitch Solomin (http://rniito.org/solomin, solomin.leonid@gmail.com)

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4. Solomin, L.N. Practical Classification of long bone deformities / L.N. Solomin, V.A. Vilensky // the 5th Meeting of the ASAMI International. Program and Abstract Book.- St.Petersburg, 2008. - p.339 (
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