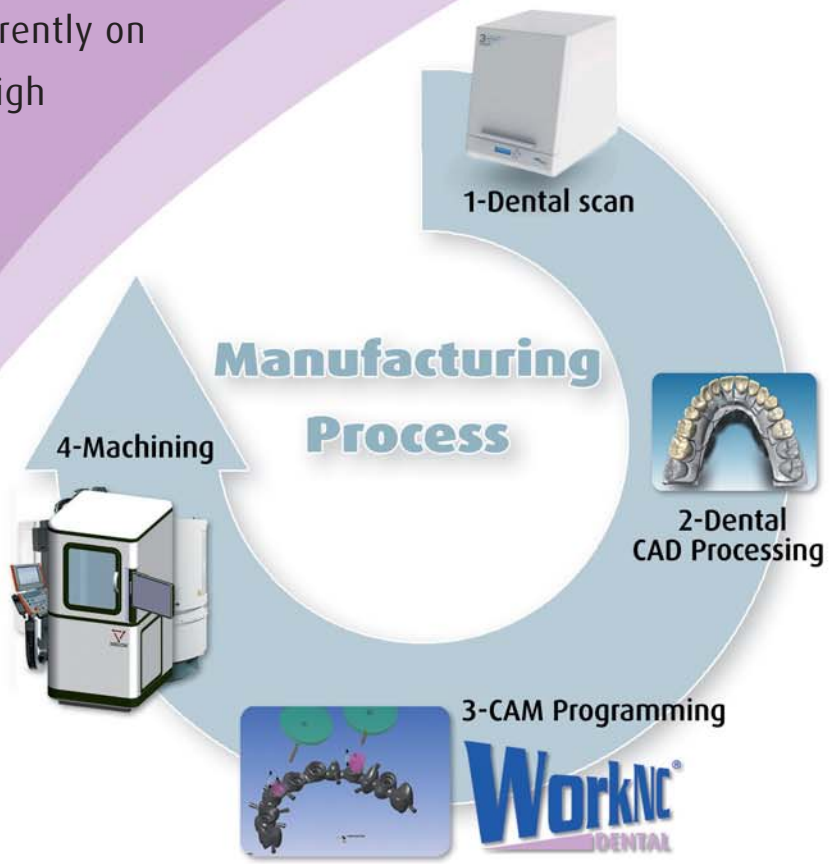
WorkNC® DENTAL

«One button CAM» Automatic 3 to 5-axis machining for the dental industry

Sescoi®
www.sescoi.com

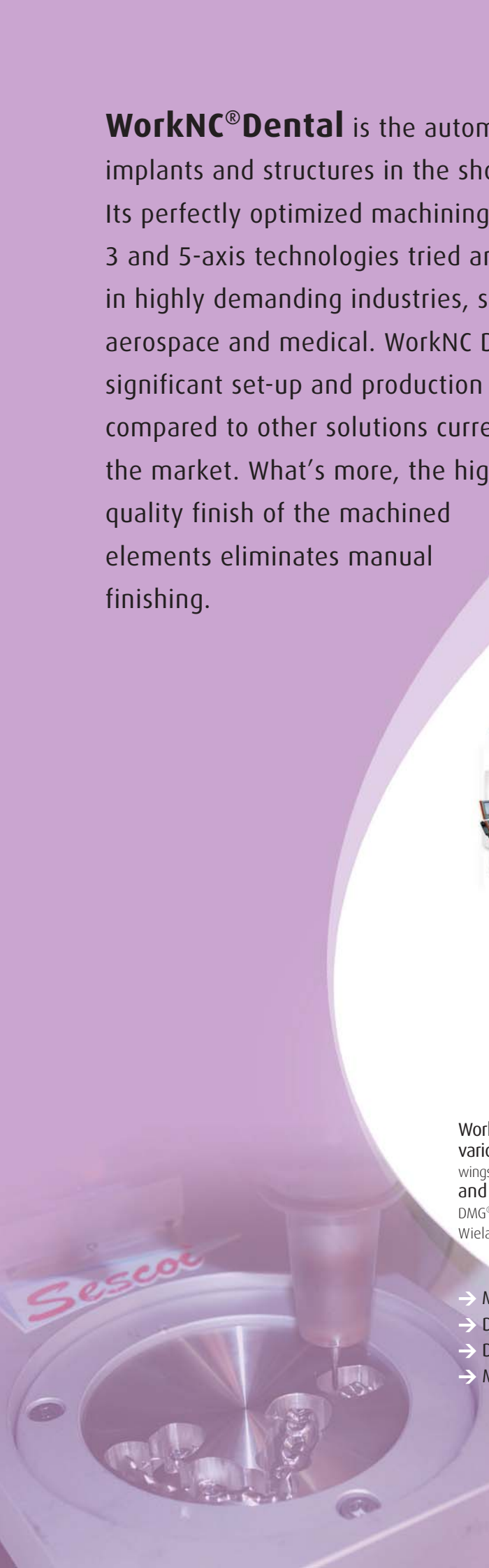
WorkNC®Dental is the automatic solution for machining dental prostheses, implants and structures in the shortest possible time.
Its perfectly optimized machining sequences apply state-of-the-art 3 and 5-axis technologies tried and tested by thousands of users in highly demanding industries, such automotive, aerospace and medical. WorkNC Dental offers significant set-up and production time-savings compared to other solutions currently on the market. What's more, the high quality finish of the machined elements eliminates manual finishing.



WorkNC Dental is a *totally open* system:

WorkNC Dental imports STL or native geometries originating from scanners or various well-known dental CAD systems: (3 Shape®, Cynovad®, Cercon®, Dental wings®,...) and is able to control all types of machine-tools used in the dental and industrial sectors: (360SDM®, Agie Charmilles®, Charlyrobot®, Datron®, Dent-Tec®, DMG®, Lilian®, Lycodent®, Imes®, Isel®, Kavo®, Mikron®, Real Meca®, Roland®, Röders®, VHF®, Wieland®, Willemin Macodel®, Wissner®, Witech®, Yenamak®,...)

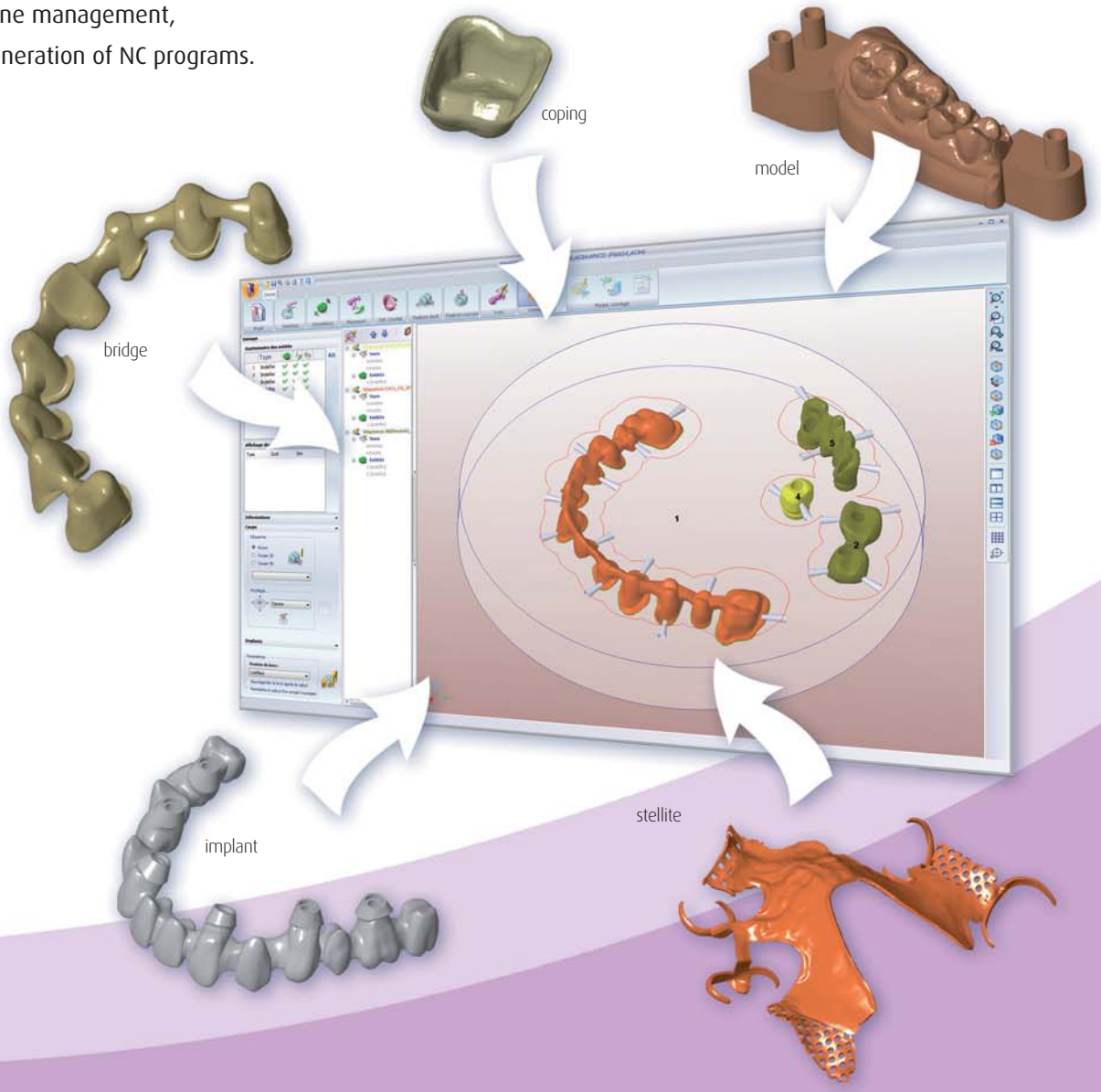
- Multi-machine parameter configurations,
- Dental machine-tool postprocessor library,
- Development or specific adaptation of customized postprocessors,
- Machining simulation with machine kinematics.



The advantages of a simple, efficient integrated solution

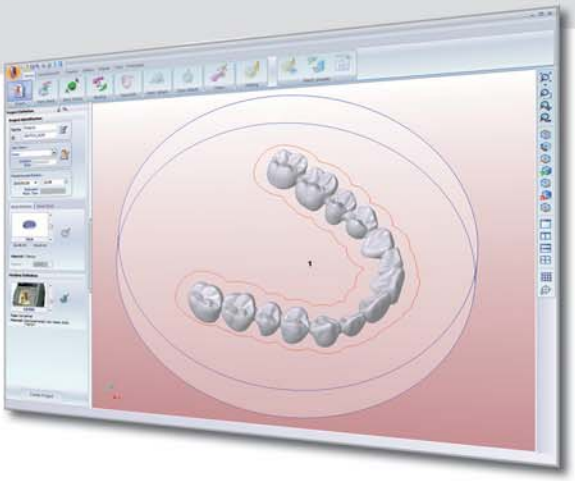
WorkNC Dental incorporates dental industry best practices, making these available to prosthesists and dental technicians who are not experts in machining technologies. WorkNC Dental requires minimal training - in less than an hour, users can be setting up their machining routines for zirconium, cobalt chrome, titanium, PMMA,... on any type of machine tool.

- Wizards to assist users through the preparation phase and validate each step is done correctly,
- Integrated interface for both programming and machining,
- Multi-process management (discs, bars, implants, stellites,...),
- Multi-sequence machining allows parallel processing of different prosthesis types in the same stock,
- 4 and 5-axis positional and simultaneous machining,
- Optimized machining sequences for each type of material (Cobalt Chrome, Titanium, Zirconium, Ceramic, Wax,...),
- Multi-machine management,
- One click generation of NC programs.



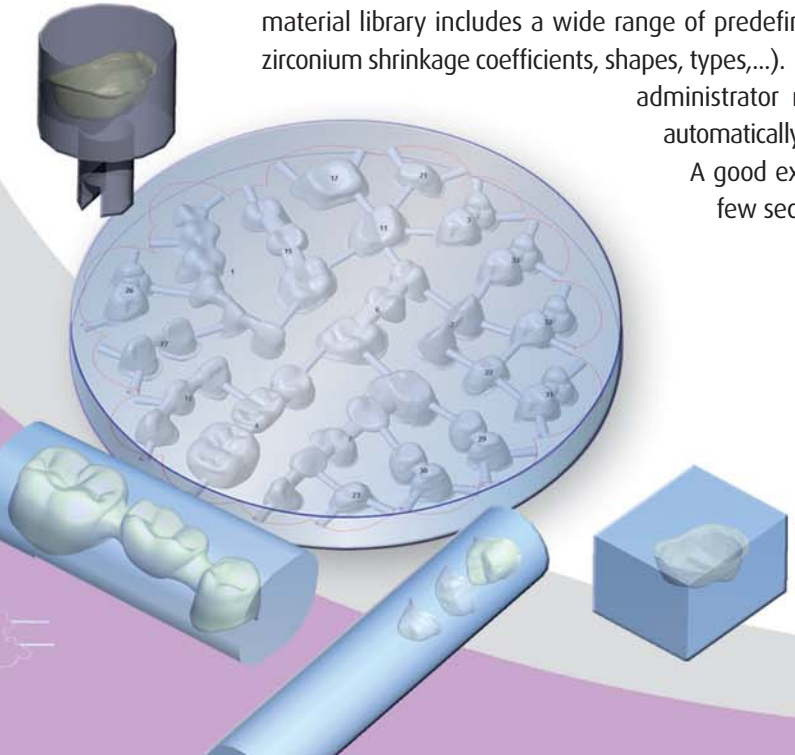
Set up dental machining routines
in a few simple, fast steps

WorkNC®Dental has comprehensive automated and interactive features that guide users quickly and smoothly through the job preparation and machining process.



Multi-machine management:
Instant selection and definition of pre-defined machine configurations. WorkNC Dental is an open system able to pilot all types of numerical controllers. Machine selection automatically defines all associated parameters (postprocessor, machine axis system, limits on materials to be machined, ...).

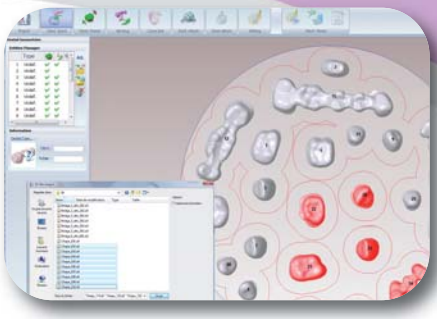
Multi-stock and multi-process management:
Instant selection and definition of stock material and dimensional configuration. The standard WorkNC Dental stock material library includes a wide range of predefined machining blanks along with all related data (dimensions, zirconium shrinkage coefficients, shapes, types,...). The library can be customized and data added or modified via the administrator mode. The selection of different types of machining blanks automatically loads specific, optimized preparation and machining process data. A good example of this is bar machining, where preparation takes just a few seconds.



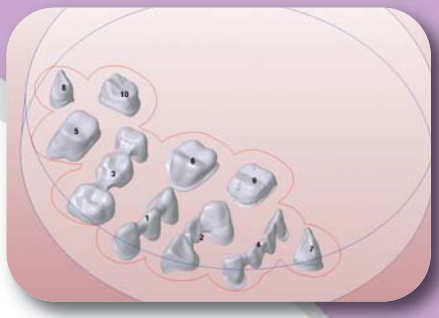
>Fast & Efficient re-use of partially machined blanks:
WorkNC Dental incorporates advanced partial machining blank management. Blanks partially used in the production process can be quickly accessed from the used stock library and re-introduced into the set-up and machining process without wasting time or material.

WorkNC Dental Preparation Wizards

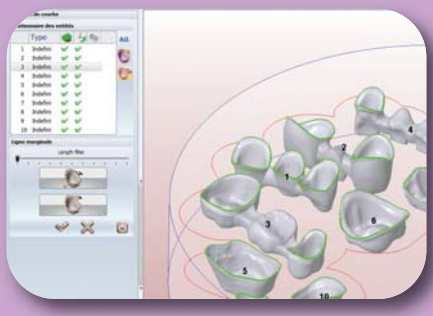
Automated set-up features with interactive material and process optimization.
Preparation steps are easily identified with WorkNC Dental's navigation and progression icons.
Users easily identify set-up steps and where they are in the process and quickly navigate from one stage to another.



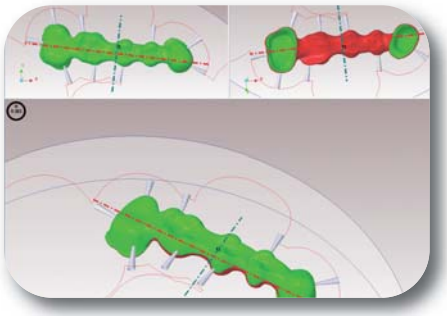
>Multiple concurrent imports and automatic nesting:
Reconstruction importation in STL or native dental CAD formats can be carried out in single or multiple modes by simply selecting a list of files or a complete folder. Automatic nesting eliminates the need for users to perform tedious, time-consuming tasks (automatic multi-importation, automatic nesting, element classification, automatic identification on machining supports...)



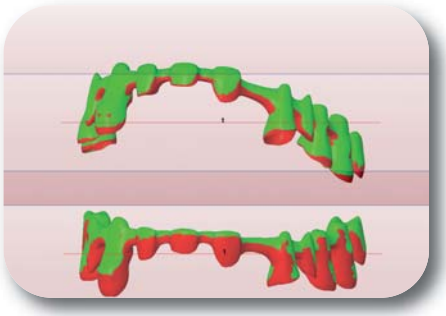
>Automatic element nesting:
Minimizes material wastage.



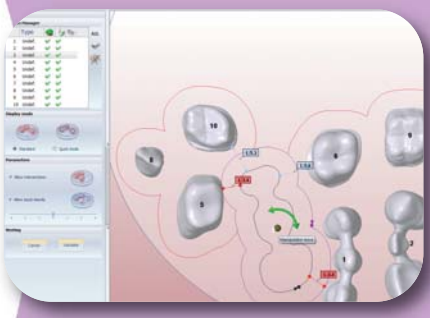
>Automatic margin line generation:
Whatever the origin of the prosthetic elements, WorkNC Dental will use its powerful algorithms to automatically detect and generate cervical limits. The editor in this easy to use feature allows automatic selection or modification of the suggested margin line.



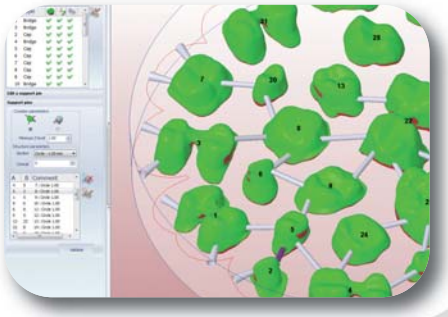
>Optimized orientation:
This module allows users to adjust element orientation to the optimal position for machining. The software's undercut area visualization enables users to quickly achieve optimal positioning to reduce undercut areas



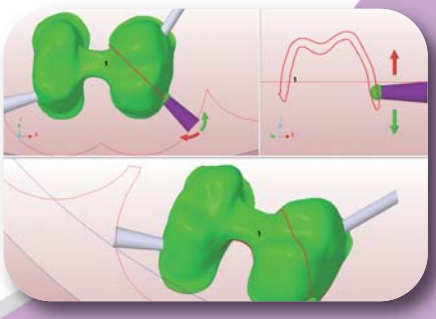
>Optimized orientation:
This module also allows optimized element positioning to be modified and optimized with respect to the dimensions of the machining blank.



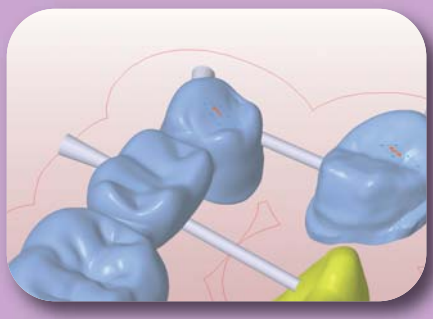
>Positional optimization (nesting):
The interactive positioning mode ensures optimized placement of elements prior to machining. The "drag & drop' and "dynamic compass" functions make optimal nesting fast and easy, eliminating material waste. The proximity management feature provides interactive dimensional feedback instantaneously, alerting the user when an element is moved too close to another so machining integrity is maintained.



>Automatic insertion of support pins (margin line protected):
WorkNC Dental offers several ways to create support pins, from automatic insertion to precise positioning depending on where a point is clicked. The user can pre-select the "distance from margin line" setting and supports will automatically be created at the specified distance from the margin line.



>Support pin edition and modification:
Modifications can be applied to all the elements in a project or individually with the integrated editor. Save time by modifying supports on the fly without leaving the module you are working in. (support pin modifications scope: orientation, position, size, geometry, predefined elements library,...).



>Element Identification Engraving
The ID engraving feature eliminates time wasted identifying and separating machined elements.

Dental Machining

Toolpath generation is totally automatic and users do not need any machining experience to run this operation. WorkNC Dental includes more than 70 technically advanced, 3 to 5-axis toolpaths. Sescoi's advanced technology and 20 years of expertise are combined and automated to provide unparalled ease of use and productivity you can't find anywhere else.

Automatic toolpath generation:

WorkNC Dental includes optimized machining sequences specific to the morphology of each prosthetic reconstruction. The optimized sequences have been developed to suit the materials used in the dental industry. Hard material machining technologies are applied that efficiently and cost effectively machine materials such as, titanium, cobalt crome, and ceramics.

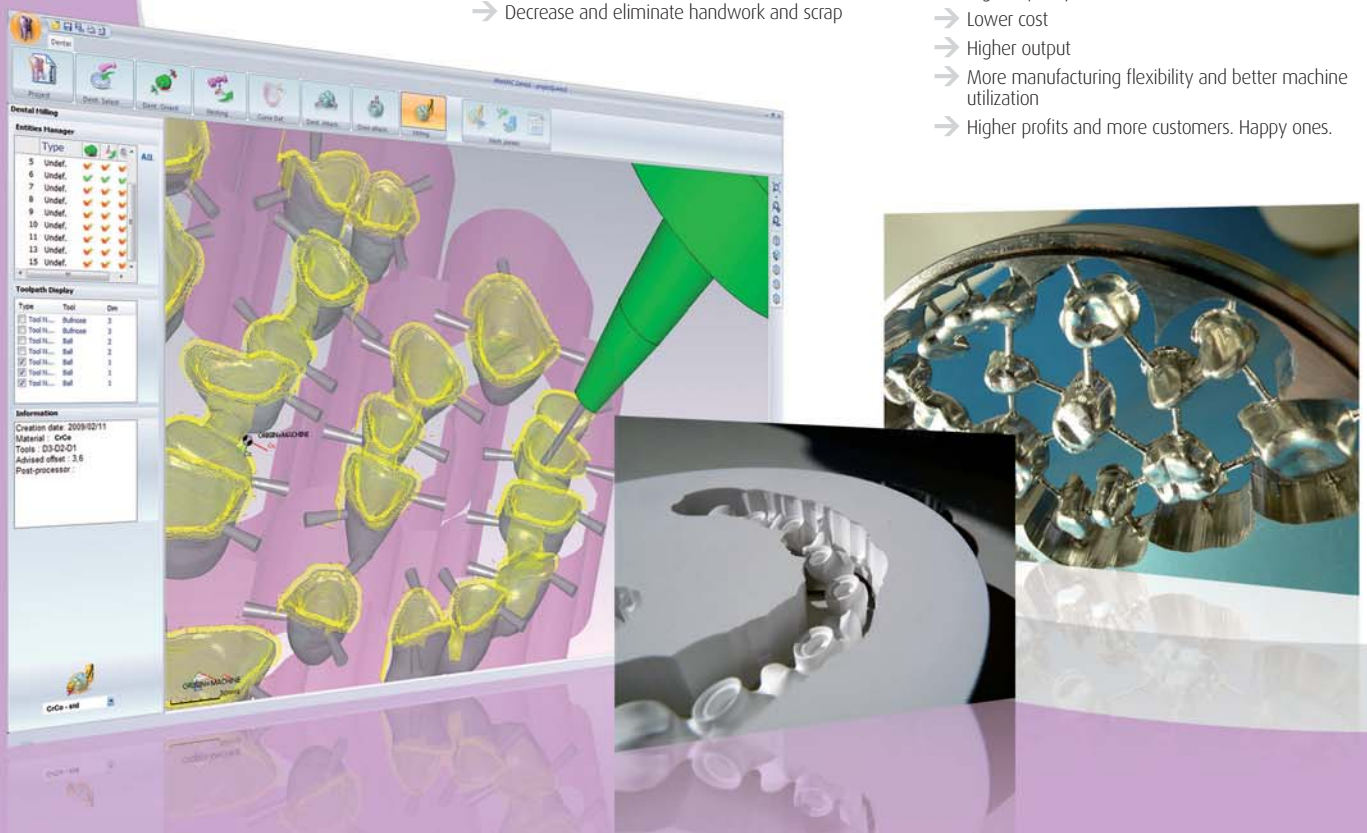
Automatic Collision Checking & Dynamic Machining Simulation:

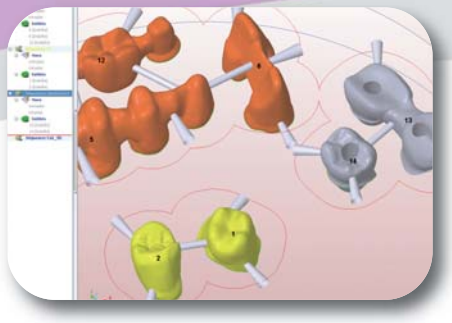
WorkNC provides the highest reliability for risk free machining. Run 24 hours "lights out" and rest assured your production and investment are safe.

WorkNC Dental is scalable. Use the existing library of optimized machining sequences or add sequences to the library for your specific processes, tools and applications. New machining sequences can be developed by Sescoi's specialist engineers or created by your highly experienced users with the "Template Edition" module.

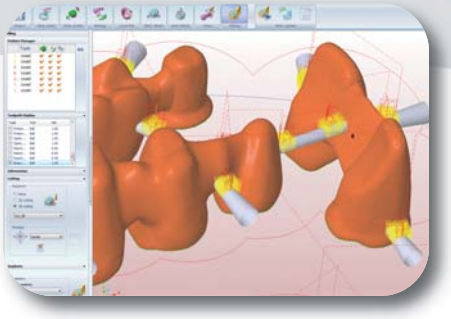
Benefits Summary:

- Machine elements like an expert without having any experience
- Increase operator productivty immediately without training costs
- Achieve perfectly programmed optimized jobs every time.
- Improve material utilization
- Decrease and eliminate handwork and scrap
- Faster machining cycle times
- Eliminate wasted time identifying and segregating machined elements
- Faster operator processing of elements post machining
- Longer tool life
- Higher quality finishes
- Lower cost
- Higher output
- More manufacturing flexibility and better machine utilization
- Higher profits and more customers. Happy ones.

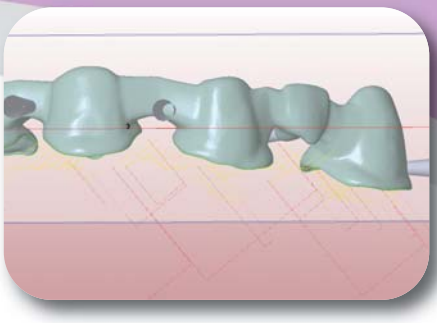




>WorkNC DENTAL, the multi-sequence solution:
Users can simultaneously machine the same material blank with different machining sequences, creating different types of elements during the same machine set-up and cycle. The result is significant productivity gains by eliminating the interruption of the set-up and machining cycle. Now you can mill copings, bridges, implants, and more at the same time without interrupting your process flow.



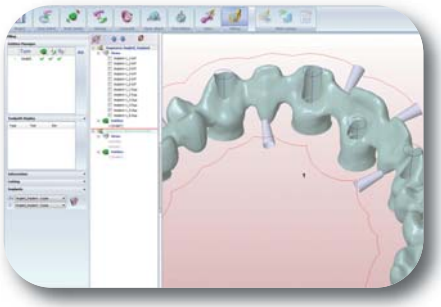
>Pin pre-cutting:
Pre-cut support pins using 2D or 3D strategies. The 3D mode cuts the pins flush with the tooth geometry eliminating the need for hand polishing after machining.



>Automatic positional 5-axis machining:
The WorkNC Dental Advanced version offers positional 5-axis machining functionality, enabling machining of undercuts around embrasures, extrados and intrados. It also allows safe use of shorter tools improving cutting quality and increasing tool like.

Implant framework machining:

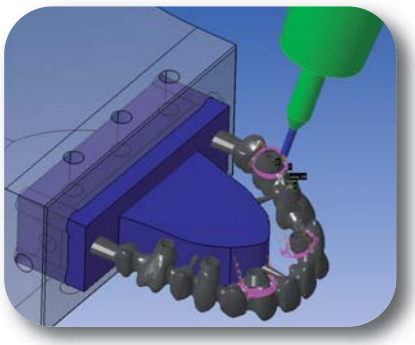
The WorkNC Dental Expert version integrates 5-Axis positional and simultaneous 5-axis implant machining functionality. The Implantology module automatically detects implant pivot holes and hole orientation. The recognized geometries are machined with specific sequences depending on the connection types. The 5-axis positional toolpaths guarantee reliable and precise machining of inclined holes.

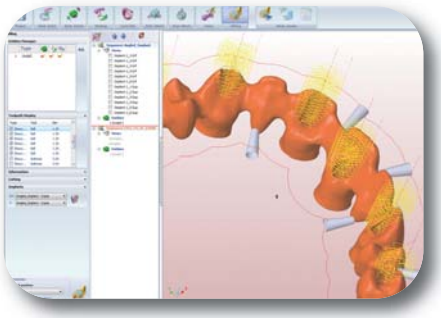


> Automatic detection of implant holes:
Automatic detection and association of machining sequences for implant connections.

Automatic 5-axis machining:

- Automatic, collision free simultaneous 5-axis toolpaths
- Direct use of simultaneous 5-axis machining sequences on STL models
- Complete modeling of 5-axis machines for use in collision avoidance and machine limit management
- Automatic avoidance of collisions between tools, tool holders, spindles and tooling equipment
- Consideration of machine kinematics for axis rotation and movement limit management
- Customized postprocessors for 5-axis machines.
- Automatic remachining of undercut areas in 3-axis mode using lollipop cutters or in 5-axis mode with standard tools.

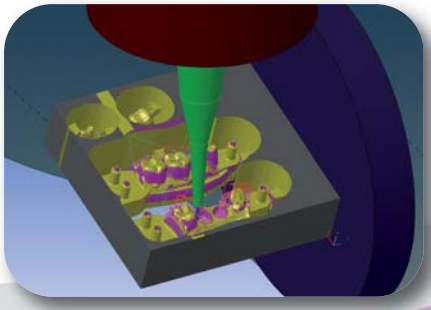


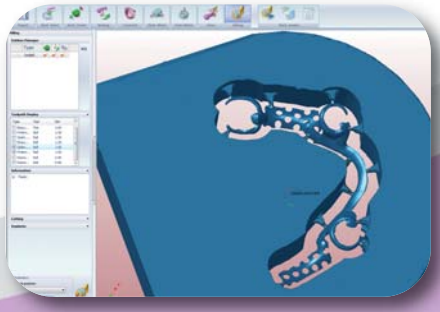


>Visualization of divergent pivots:
Positional 5-Axis machining of implant holes

Specific process machining:

WorkNC Dental is able to handle specific processes such as stellite and model machining.
Model machining requires the use of 5-axis strategies in order to correctly handle undercut areas.





Sescoi® has the Solution

Since 1987, manufacturers around the world have put their trust in the high quality, reliability and ease of use of SESCOI's software solutions. WorkNC, one of the world's most widely used CAM/CAD system, WorkPLAN Enterprise a new generation custom manufacturing ERP solution, the MyWorkPLAN job management system and WorkXPlore 3D, an award-winning, high-speed 3D viewer, are just some of the solutions developed by Sescoi. We constantly invest in quality, customer service, research and development to provide customers with cutting edge software technology.

WorkNC Dental and Sescoi on the Web:
View WorkNC Dental machining videos available on **www.worknc dental.com.**
Check out **www.sescoi.com** for further information about Sescoi and the products and service that make us the leading specialist software solutions provider to a range of demanding industries.

SESCOI USA INC.
2000 Town Center, Suite 1730
48075 Southfield - Michigan
USA
Tel. (+1)-248-351-9300
Fax (+1)-248-351-9301
info@sescoi.com

SESCOI International
UK Customer Services
PO Box 14562, Trinity Place,
Midland Drive, Sutton Coldfield
B73 9PP West Midlands
UNITED KINGDOM
Tel. 0844 561 7014 from UK
info@sescoi.co.uk

SESCOI FRANCE SAS
& SESCOI INTERNATIONAL SAS
Boulevard du Général de Gaulle
71009 Macon Cedex
FRANCE
Tel. (+33) (0)385216621
Fax (+33) (0)385216622
international@sescoi.fr

SESCOI GMBH
Schleussnerstraße 90-92
D-63263 Neu-Isenburg
GERMANY
Tel. (+49) (0) 6102-7144-0
Fax (+49) (0) 6102-714456
info@sescoi.de

SESCOI IBERIA
C/ Narcis Monturiol,
2, Planta 4
08960 Sant Just Desvern
Barcelona
SPAIN
Tel. (+34).93.480.2455
Fax (+34).93.473.4219
info@sescoi.es

SESCOI KK
Kamiyacho Plaza Bldg. 3F 4-1-14
Toranomon Minato-ku 105-0001
Tokyo
JAPAN
Tel. (+81).3.3578.0025
Fax (+81).3.3578.0026
info@sescoi.co.jp

SESCOI INDIA SOLUTIONS
PRIVATE LIMITED
Q - 401, 4th Floor 244,
Mayur Trade Center,
Mumbai Pune Highway Chinchwad
Pune 411 019
INDIA
Tel. (+91).20.46701586
Fax (+91).20.46701587
india@sescoi.com

SESCOI CHINA
Room 14B, NO.450 Fu Shan Road,
Pudong New Area
Shanghai 200122
CHINA
Tel. (+86).21.58.30.37.19
Fax (+86).21.58.30.36.64
info@sescoi.cn

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reseller :

SESCOI INTERNATIONAL SAS
Boulevard du Général de Gaulle - 71009 Macon Cedex - France
Tel. (+33) (0)385216621 - Fax (+33) (0)385216622 - Dental.sescoi@sescoi.fr

Sescoi®
www.sescoi.com