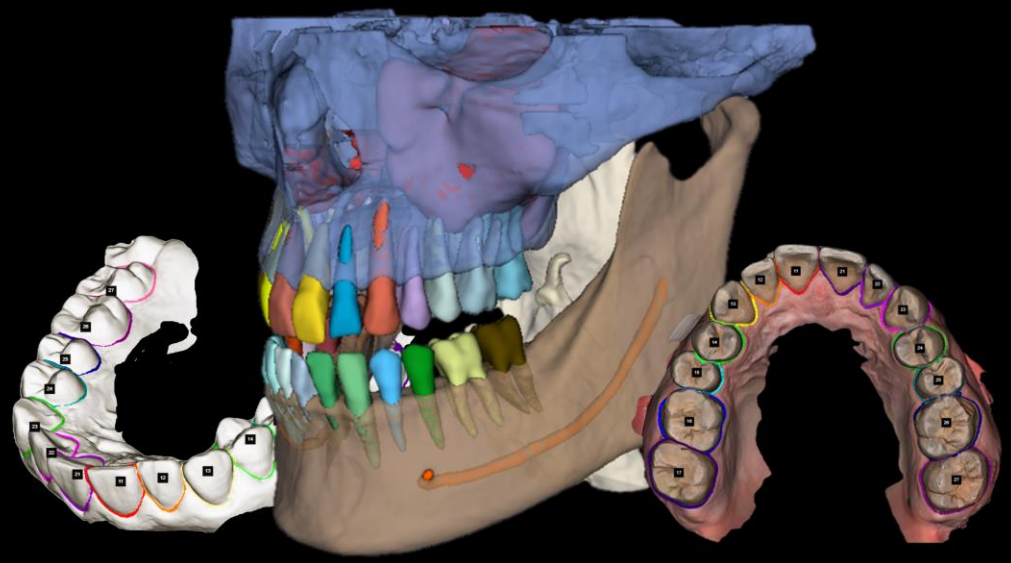
DentalLAB

The AI-Powered Precision For Dental Industry

Version 1.0.1
Osaka 2025/10/28

Global Healthcare Department



About DentalLAB

DentalLAB is cloud-based AI-assisted software for dental industry.

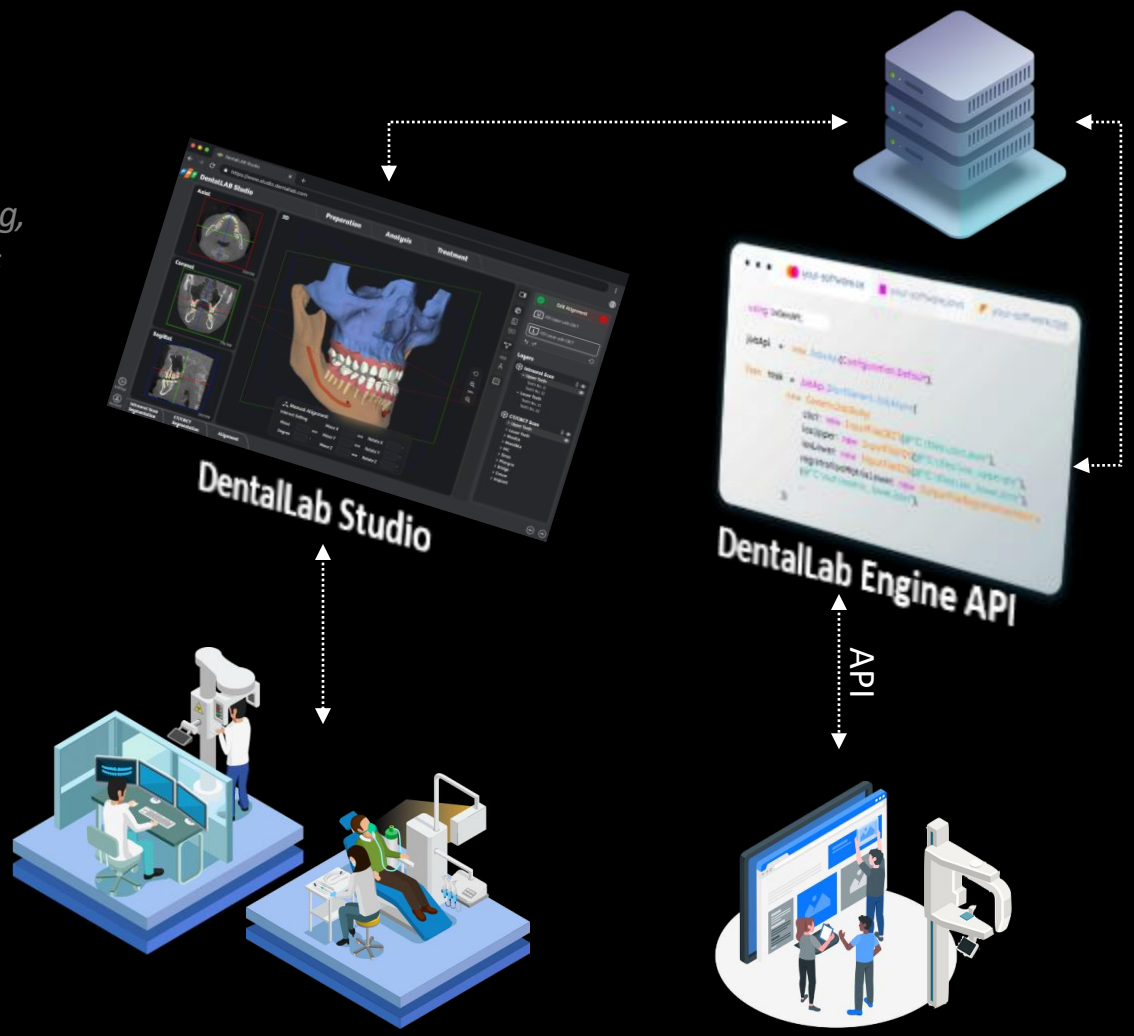
As a fundamental part of computer-aided-design (CAD) systems for treatment planning, accurate segmentation from digital intraoral scan and CBCT is a precondition for helps visualise precise 3D models of anatomical structures for the diagnosis, treatment simulation.

DentalLAB Studio (Viewer): Web based solution allows users to display dental images are stored in cloud-based, accessible from anywhere and any device.

We help you to engage your patients using a visual representation of their anatomy and diagnosis, treatment proposal.

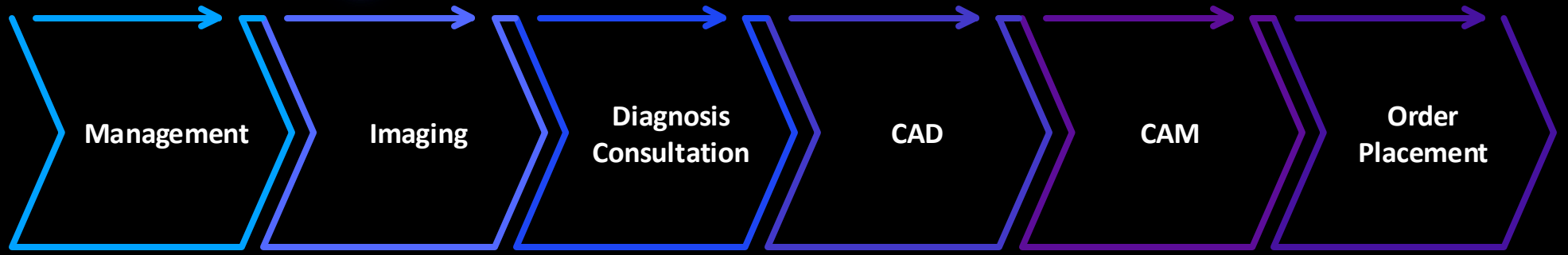
DentalLAB Engine (SDK)*: Helps save time by using our easy-to-use APIs to assist users in automating the tedious and labor-intensive tasks of the orthodontic, orthognathic, implant, restorative planning process and more.

** We are planning to release in late 2025*



Where is the DentalLAB in Dental Workflow ?

- Forget about all the manual work you had to suffer. Improve your image processing workflow with our solution capable of offering AI automate segmentation, registration, detection tools for analyzing 3D and 2D images.
- Save time, reduce complexity, and enhance patient engagement.

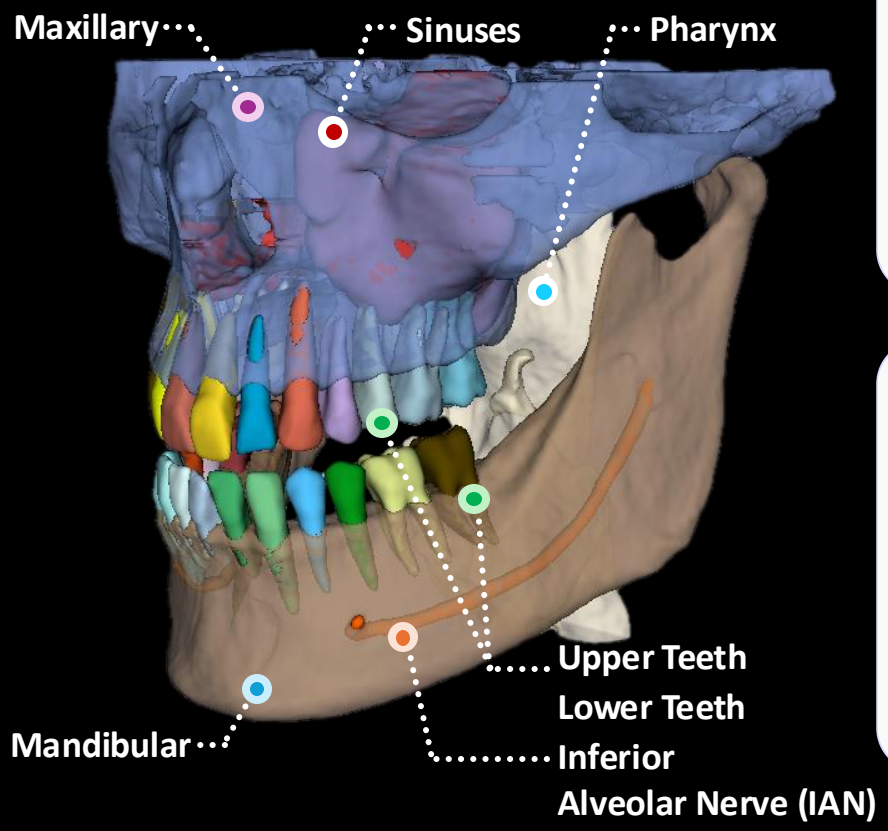


Planning release in 2026

- Automated lateral cephalometric tracing
- Enumeration and diagnosis on panoramic X-rays
- IOS and CT/CBCT landmark detection
- Occlusal classification of 3D dental models
- Automatic tooth arrangement

CT/CBCT Segmentation

Leverage automated segmentation to generate 3D models from CT/CBCT scans. Utilize manual tools to adapt segmentation parameters, optimizing the final model for diagnostic and planning purposes.



Pain Point

Accurate CT/CBCT segmentation are the basis of diagnosis but the issue is that manual segmentation takes several (5~7) hours.

Our Solution

Automated segment 3D models of structures including mandibular, maxillary, upper and lower teeth (32 tooths), pharynx, sinuses, and IAN

Use Case

1. Orthodontic *(The roots and bone get automatically segmented so your users can avoid root collisions, dehiscence and fenestrations)*
2. Surgical Guide
3. Prosthetic and more

Intraoral Scan (IOS) Segmentation

Employ automated algorithms to precisely segment tooth crowns and gingiva from Intraoral scans. Utilize manual adjustment tools for refining segmentations, ensuring accuracy and detail.

Pain Point

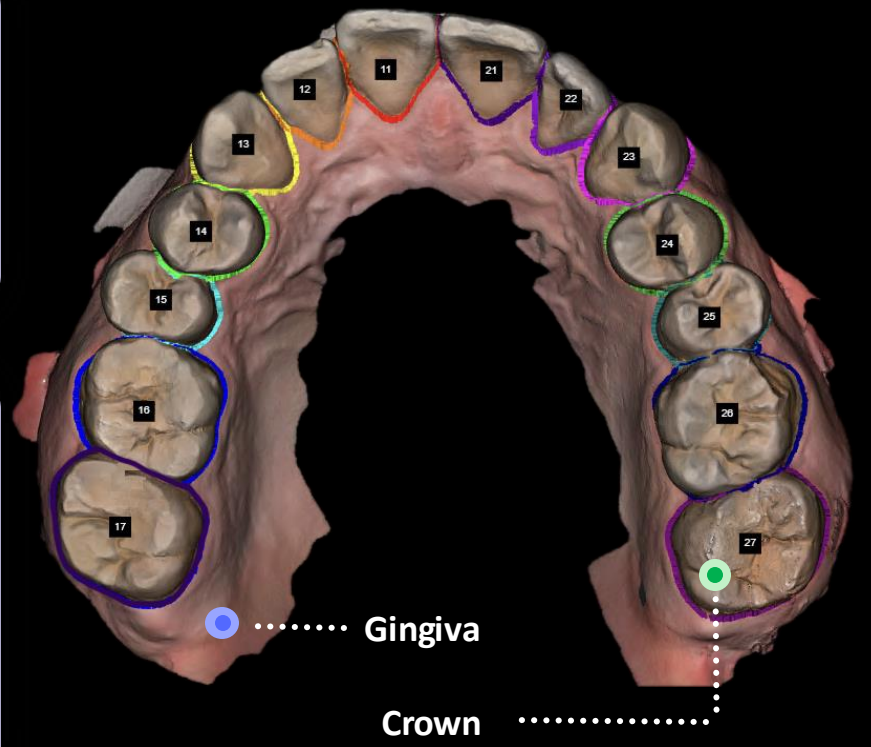
Manually performing tasks is time-consuming (~ 1 hour), tedious, and expertise dependent

Our Solution

Automated segmentation of dental crowns and gingiva from your digital Intraoral Scans

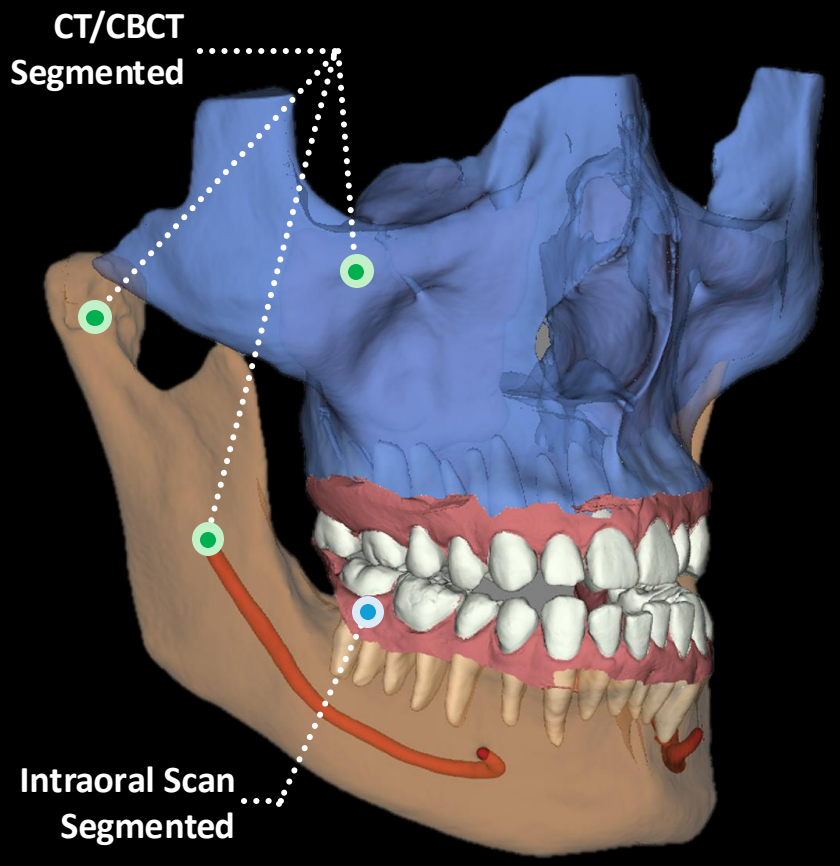
Use Case

1. Orthodontic (create aligner or mouthpiece)
2. Retainer



Alignment of CBCT and IOS

Automatically register the Intraoral Scan to the CBCT data, achieving precise spatial correlation. Employ advanced manual alignment tools to fine-tune registration, ensuring optimal integration of surface and volumetric data.



Pain Point

Methods based on landmark require the user involved initial alignment, which is a cumbersome and time-consuming procedure due to manual clicking

Our Solution

Our solution offer automatic register IOS to the CBCT in a matter of seconds.

Use Case

1. Implant treatment planning
2. Orthodontic
3. Design Crown/Bridge/Pontic

Virtual Setup

Harness the flexibility to create a comprehensive treatment plan within the virtual environment. Facilitate clear and effective communication of the proposed treatment strategy to all stakeholders.

Pain Point

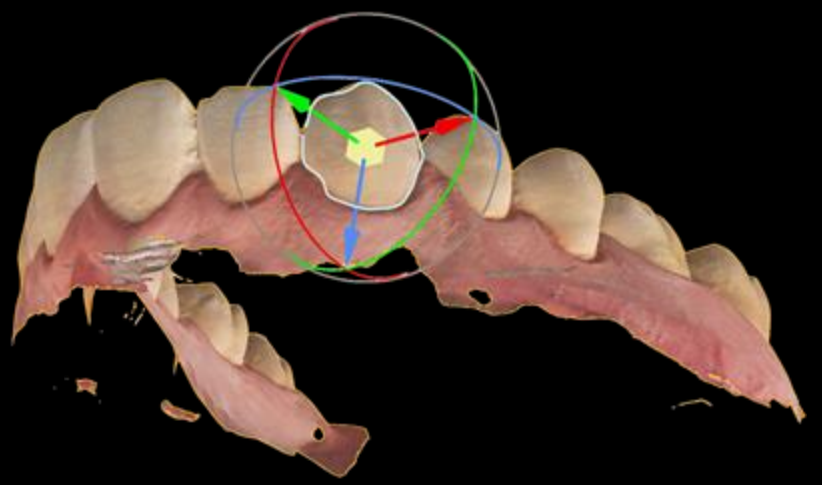
Complex procedures combined with raw CBCT images make it difficult for patients want to understand what will happen during the treatment and accept treatment regimens

Our Solution

3D virtual setup provides an accurate simulation of treatment by positioning tooth in the desired location and evaluating the effectiveness of personalized plan

Use Case

1. Orthodontic (Create aligner or mouthpiece)
2. Retainer
3. Oral and maxillofacial surgery



Our Offerings

5

Minutes or Less

Generate 3D models from CT/CBCT DICOM files, enabling detailed visualization in under 5 minutes

(Based on average data size of 300MB. Processing time will vary depending on factors such as network speed, data size, etc.)

1

Minute Processing

Perform automated segmentation of dental crowns and gingiva on Intraoral Scan in just 1 minute.

1

Minute Fusion

Merge CT/CBCT root data with Intraoral Scan crowns for comprehensive diagnostics in 1 minute.

24/7

Available

Access our secure cloud platform on any device, ensuring uninterrupted dental enumeration and diagnosis.

Our Values

Transform your practice with DentalLAB by FPT, offering AI-driven solutions for faster, more accurate diagnoses and improved patient outcomes.

Detailed Visualization

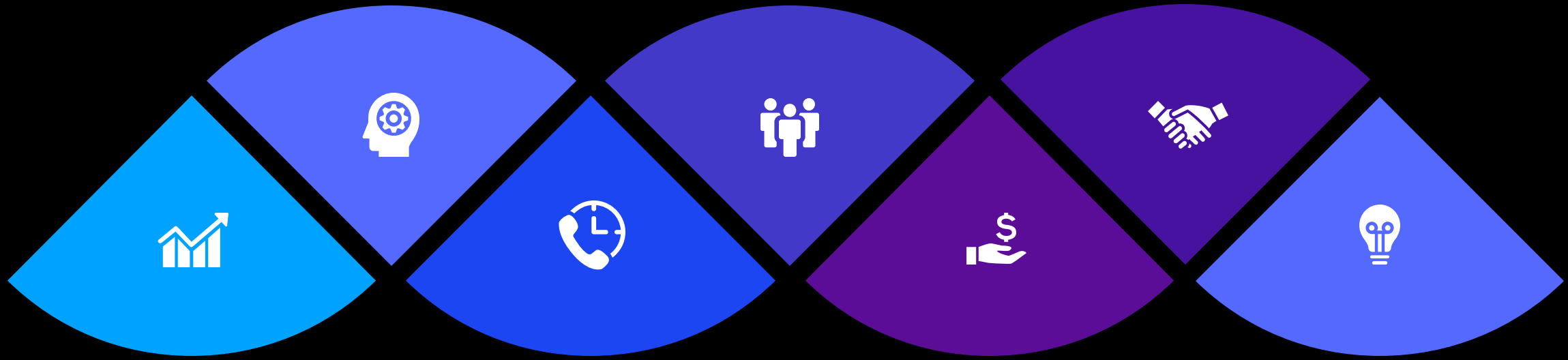
Experience unprecedented clarity with our advanced 3D modeling technology

Streamlined Workflow

Deliver enhanced value and diagnostic experience to your customers with the integration of our solutions

Improved Communication

Build stronger patient relationships through clear, AI-powered visualizations that boost understanding and trust



AI-Enhanced Diagnostics

Transform your practice with cutting-edge precision that enables highly personalized treatment plans

Time Savings

Accelerate treatment workflows and reduce wait times, while allowing practitioners to focus on delivering superior care

Cost Reductions

Leverage intelligent automation to streamline manual processes, significantly reducing operational costs

Enhanced Education

Revolutionize dental education through immersive visual experiences that seamlessly connect theory with practice

Our Targets

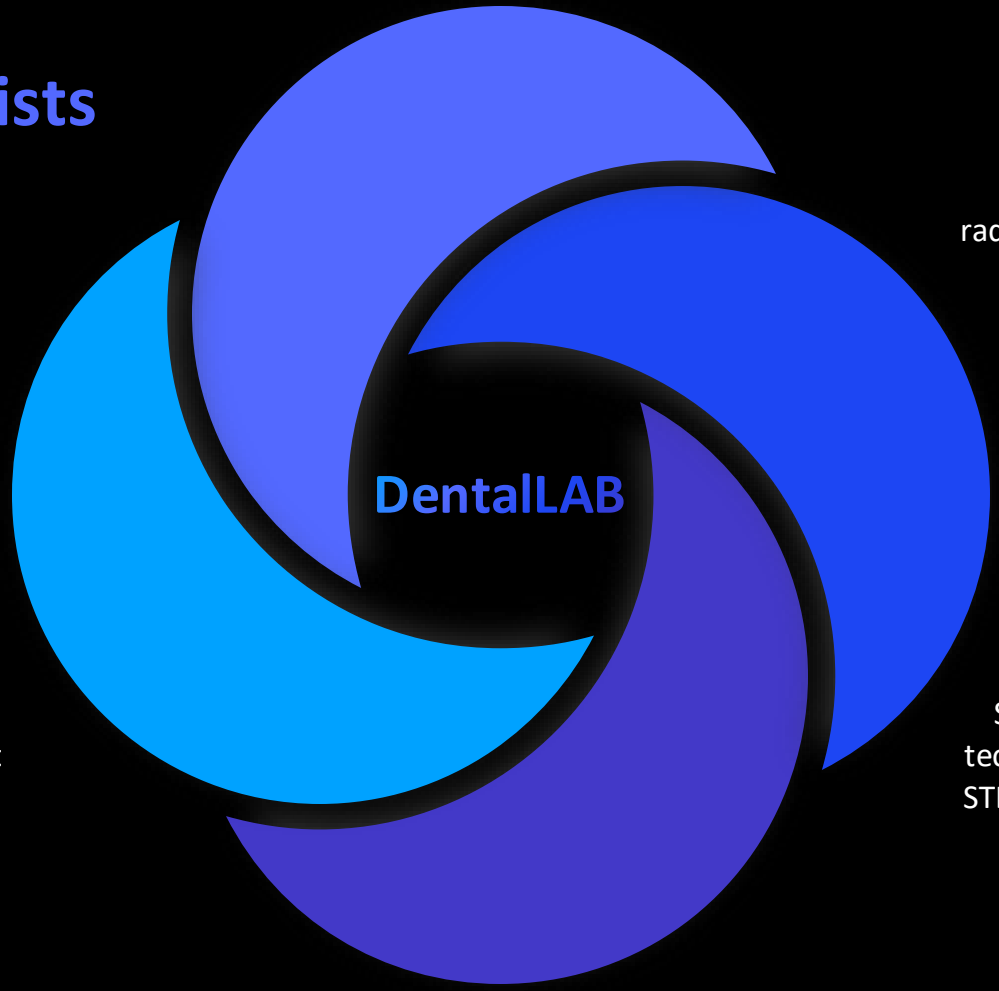
With our mission of improve global oral health through AI by providing better solutions for dentists and their patients. Additionally, reducing the cost of dental care to increase the number of patients who can feel confident with a beautiful and healthy smile.

Clinicians and Specialists

Enhance efficiency, productivity, and patient communication through an exceptional AI-driven product suite that promises to instill confidence in patient diagnoses

Universities

Enrich the knowledge of future dentists and radiologists through an immersive visual experience that breathes life into the art of teaching



OEM

Embed our solution plug-in to automate your implant, maxillofacial or orthodontic treatment planning or other bussiness software cost-effectively.

Laboratories

Streamline your processes with cutting-edge AI technology that can effortlessly convert CT/CBCT to STL for creating powerful 3D printed surgical guides

Achievements & Compliance

Global awards and medical device certifications that demonstrate DentalLAB’s quality and reliability

DentalLAB has been honored as a Silver Globee® Winner in the Digital Health Solutions

It was highly recognized for its use of AI-powered 3D imaging diagnostic technology, enabling precise and efficient dental diagnosis.

IEC 62304

Furthermore, DentalLAB complies with the IEC 62304 international standard for the software life cycle processes of medical device software.This certification proves that our development process ensures safety, high quality, and clinical reliability.By meeting international medical software standards, DentalLAB supports better patient care and stronger partnerships across the dental industry.

Website

https://dlab-ai.com


GHC
FPT
FPT Software
THANK YOU.

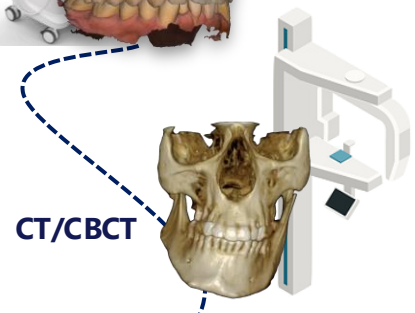
Appendix

Orthodontic Workflow

FPT Scope

Scan
(CBCT, IOS & FS)

Intraoral Scan (IOS)



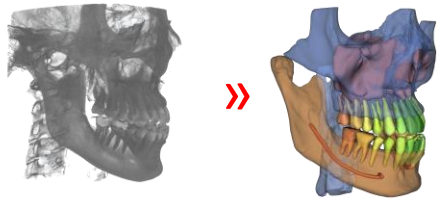
CT/CBCT

Facial Scan (FS) (Optional)

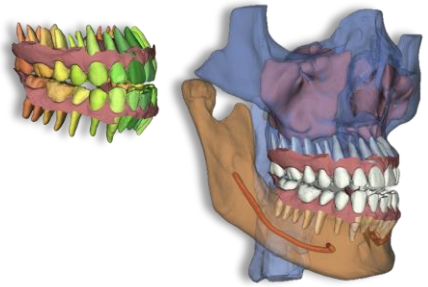
Preparation
(Alignment & Edit)

IOS Segmentattion

CBCT Segmentattion

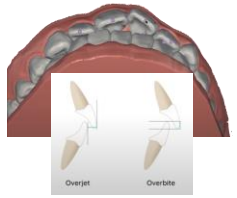


Aligment of CBCT & IOS

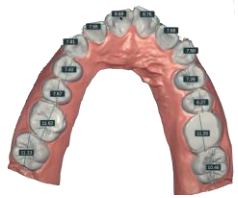


Analysis
(Visualization & Image Processing)

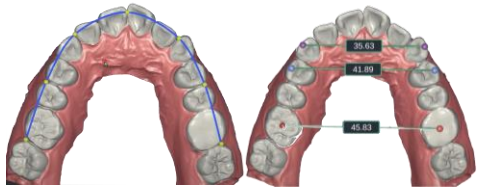
Overjet & Overbit



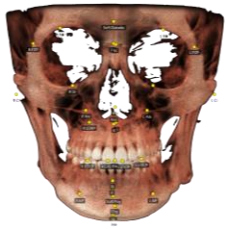
Tooth Size Ratio



Arch Length & Arch Width Analysis



Cephalometric Analysis

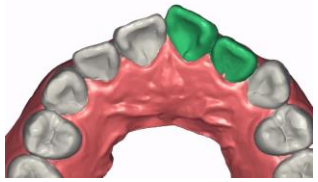


Jaw Motion Analysis

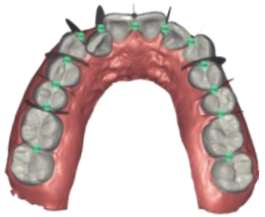
Sphere of Monson, Curve of Wilson Analysis, and more

Treatment
(Virtual Patient)

Virtual Planning



Interproximal Reduction (IPR)



Treatment Report

CAD/CAM
(Design & Printing)

Aligner Design

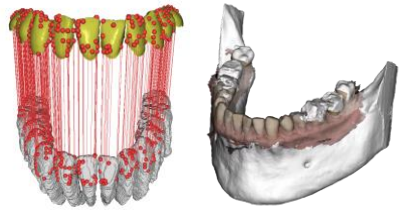
Aligner 3D Printing

Attach Aligner

Follow Up

Implant Workflow

FPT Scope



Management & Admin
Software to collect, store, protect and communicate information.

CAD System
Import CBCT/IOS
Software to design and produce individualized implant design.

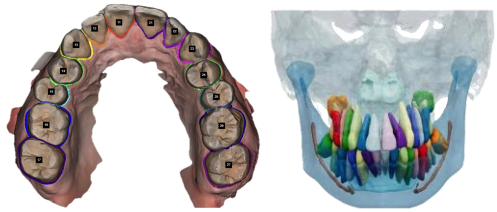
Registration
Alignment of the CBCT & IOS to create a 3D virtual patient for analysis and treatment planning purpose

3D Printing
Surgical Guide in the design step will be 3D printed for treatment

Patient Management | **Data Acquisition** | **Diagnosis · Planning · Design** | **Printing** | **Treatmeant**

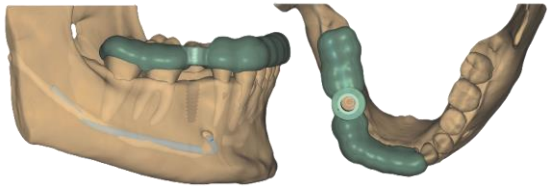
Scan IOS & CBCT
Hardware and software that capture X-rays (2D or CBCT) or digital scanners

Segmenation
AI applications for automatic segmentation CBCT and IOS data
- **CBCT (Phase 2)**
- **IOS (Phase 1 - Done)**



FPT Scope

Implant Surgical Guide Design
In 3D viewer, the optimal implant position is planed based on the patient's anatomy and the ideal future prosthetic design



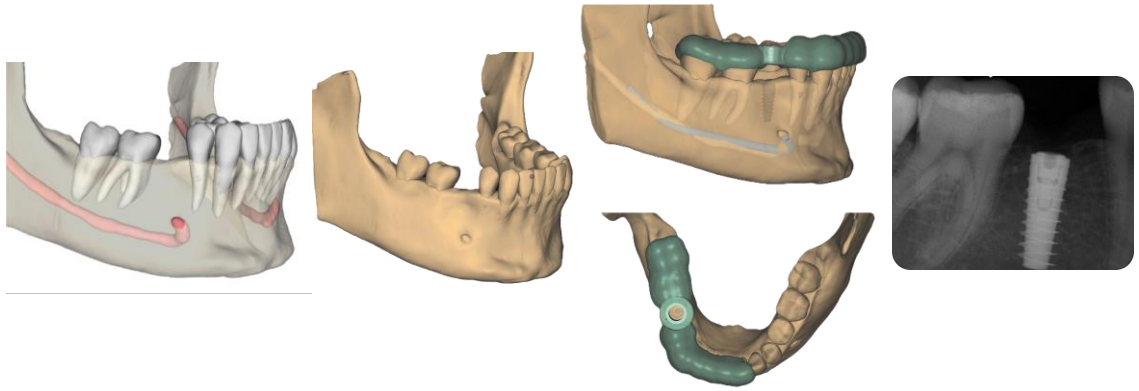
Appliance & Implant
The patient will be given a Surgical Guide to help fix and accurately determine the position of the tooth implant.

Surgical Guide Cases

Surgeon Case

Objective

- To plan the implant placement with the use of a surgical guide.



Challenge	Solution
Manual anatomy segmentation is time-consuming and requires significant clinician expertise, particularly with low-quality CBCT. Inaccurate superimposition of CBCT and IOS can lead to errors in surgical template creation.	DentalLAB automates CBCT segmentation, producing detailed 3D STL models that accurately represent the entire maxillofacial anatomy. DentalLAB help merges CBCT and IOS data into a unified model for digital dentistry treatment planning. Our solution to reduce time and burden for specialist, saving valuable time for patients.

Maxillofacial Surgery

2D and 3D preoperative visualization of the patient anatomy and condition
Virtual simulate and optimize surgeries to correct occlusal position and return broken bones to original position by adding jaw fixation frames.