

Web-based Orthodontic & Orthognathic Platform

# WEBCEPH User Manual

2026. 02.



## User Manual Information

This user manual is used solely for the purpose of explaining the use of WebCeph. This document cannot be printed or reproduced without the permission of the copyright holder.

Users are recommended to read this manual carefully before understanding the installation and functionality of WebCeph. In addition, this manual may be modified without notice. Also, the manual distributed with the product may not contain the latest version of the product.

For inquiries related to the product and this manual, please contact the following contact information.

## Contact

- Website: <http://www.webceph.com>

## Document information

- Manual Name: WebCeph User Manual
- Manual Version: 1.0.5
- Relevant WebCeph Version: 1.0.5

## Customer Notice

1. Assemble Circle Co., Ltd. may improve the function and performance of the product without notifying the user.
2. Some features of the product may not be available in all countries, languages and currencies.
3. It is illegal to reproduce and distribute the product without the consent of Assemble Circle.
4. Users should read this manual thoroughly before using this product.
5. In order to use the full functions of WebCeph, please follow the PC specifications described in this manual.

## Key Features of WebCeph

WebCeph allows users to perform the following functions while other devices are ready for use.

1. Patient information management
2. Acquire images from equipment and manage storage
3. Patient image view (provides tools for image processing and viewing functions)
4. Reinforcing counseling through counseling content support
5. Write a report using patient images

WebCeph can be used in a network environment. If installed on multiple PCs, patient and image databases can be shared and used in multiple workspaces.

## Indications for Use

WebCeph is a software indicated for use by dentists who provide orthodontic treatment for image analysis, simulation, profilogram, VTO/STO (Visual Treatment Objective) and patient consultation. Results produced by the software's diagnostic, treatment planning and simulation tools are dependent on the interpretation of trained and licensed practitioners or dentists. The device is only for the use of patients above 7 years old.

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# Chapter 1. What is WebCeph?

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## 1. What is WebCeph?

WebCeph is the Dental Imaging Software that enables users to save, manage, diagnose, and acquire patients' images. WebCeph is equipped with management and processing system for various images. Images can be acquired directly from the equipment that WebCeph currently supports. In addition, images can be imported from other digital sources.

1. Product name : Dental imaging software

2. Brand name : WEBCEPH

3. Model name : WEBCEPH

4. Symbol

No	Symbol	Description
1		Date of manufacture
2		Follow instructions for use
3		Caution
4		General warning sign (safety sign)
5		General prohibition sign (safety sign)
6		Manufacturer

## 5. Precautions

 Caution

- ◆ Check the image is accurate before performing landmarks detection. Attempting to detect landmarks on the wrong patient image may result in inaccurate measurement and analysis.
- ◆ The automatically detected landmark may differ from the actual location. If it differs from the actual position, readjust it.
- ◆ When using this program, check the supported image file formats (jpg, bmp, gif, png) before uploading image.
- ◆ Access this program only through Chrome, Firefox or Microsoft Edge.



#### Warning

- ◆ Before using this program, be sure to read the user manual.
- ◆ The report of this program should not be regarded as a medical definitive diagnosis and must be interpreted by a dentist.
- ◆ When the software is closed due to unexpected operation while using this program, the image being used may be damaged.
- ◆ Do not shut down the software or power off the PC while saving or loading data.
- ◆ For cyber security, passwords must contain at least 8 letters, numbers, or special characters.
- ◆ In the case of this program, use rights are different depending on the account, so please do not expose or share your account with others.
- ◆ When using this program, if the network is connected under the following conditions, the PC may be infected with malicious codes (malicious software such as virus or worm).
- ◆ When proper security measures for network access are not implemented
- ◆ When there is a risk of malicious code intrusion into the network
- ◆ In case of any abnormality or cyber security incident while using this program, please contact the manufacturer.



#### Prohibition

- ◆ Do not use the program for anything other than its intended use.
- ◆ This program is intended for use by medically well-trained practitioners. Do not use except for the intended user.

#### Intended user

- 1) It is used in the hospital and only used by medical professional
- 2) Medical professional trained in the use of WEBCEPH

## 2. PC System Specifications for WebCeph

### Client PC Specifications

No.	Part name	part control number	Specifications or Characteristics	Lot.	note
1	SoftWare	WebCeph	<ul style="list-style-type: none"> <li>– Model name: WebCeph</li> <li>– Ver. 1.0.5</li>   <li>– Development Tool: Sublime Text 3</li>   <li>– Application:</li> <li>Google Chrome Ver. 84.0.4149.125</li> <li>Mozilla Firefox Ver. 79.0</li> <li>Microsoft Edge Ver. 44.17763.1.0</li>   <li>–HardWare:</li> <li>CPU: x64 based processor</li> <li>RAM: More than 8 GB</li> <li>Broadband internet connection and internet connection speed of 1Mbps or higher</li> </ul>	1	

#### Server PC Specifications

### 3. WebCeph Installation and run

- ◆ This software is a Software-as-a-Service (SaaS) cloud solution that does not require a separate program installation.
- ◆ Google Chrome, Mozilla Firefox Ver. : You can use it by accessing [www.webceph.com](http://www.webceph.com) using a cloud environment such as Microsoft Edge.

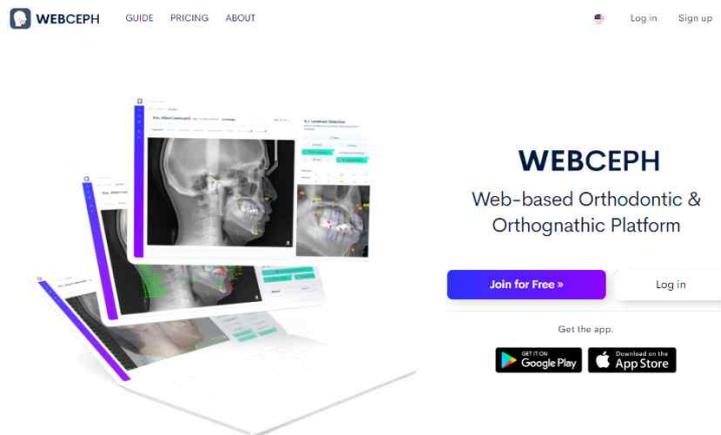
### 4. WebCeph Update

#### WebCeph Server Update (Microsoft Windows, Mac OS setting)

- ◆ This software is a Software-as-a-Service (SaaS) cloud solution, and you can access <https://webceph.com> in an Internet-enabled environment to maintain the latest version of the software.
- ◆ Installation of separate updates is not required.
- ◆ If you find a problem during use, you can search for similar queries on the Q&A bulletin board, and if you cannot find a solution to the problem, you can contact [admin@assemblecircle.com](mailto:admin@assemblecircle.com) to solve the problem.

## 5. WebCeph SignUp

1. When accessing [www.webceph.com](http://www.webceph.com), click the free sign-up button on the initial screen.



2. After entering personal information, click on the Next button. (Password must be at least 8 characters.)

### Create Your Account

Please fill in your basic info.

First name*	Last name*
<input type="text"/>	<input type="text"/>
Email*	
<input type="text"/>	
Password*	Password confirmation*
<input type="text"/>	<input type="text"/>

**Next**

3. After selecting your country/region, select your occupation. You can also enter the name of the clinic you belong to and a link to your personal Facebook page.

### Professional Profiles

Please fill in your professional profile.

Country/Region\*      Job Title\*

-----      -----

Clinic Name

-----

Facebook Link

Please fill in the full link if you have...

Previous      Next

4. After confirming and agreeing to the Terms of Use and Privacy Policy, complete the membership registration.

### Terms and Agreement

Please read terms below carefully.

I agree to [terms of use](#) of WebCeph.

#### Terms of Service

The latest update date: April 27, 2021

Welcome to the WebCeph Web Site ("Web Site"), a web site operated by WebCeph (referred to as "WebCeph", "we" or "us" in these Terms of Use).

I agree to [privacy policy](#) of WebCeph.

#### Privacy Policy

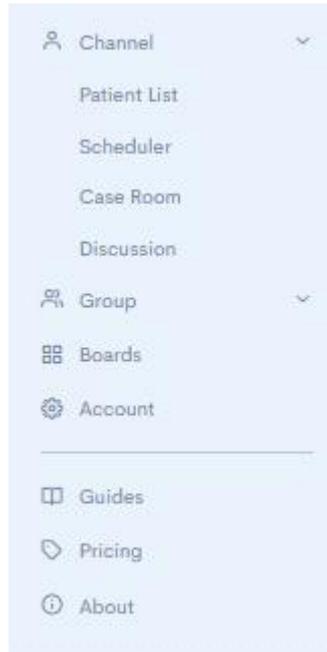
The latest update date: July 16, 2019

This Privacy Policy (the "Policy") explains the way of treatment of the information which is provided or collected in the websites on which this Policy is posted.

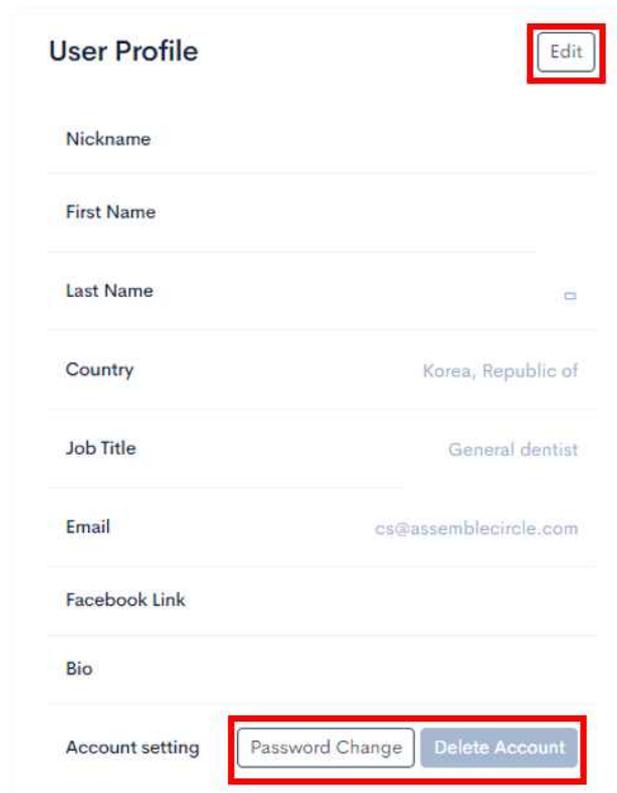
Previous      Sign Up

## 6. Account Management

1. If you mouse over the left side of the homepage after logging in, the list bar is activated.



2. When you click Account, you can edit the member information, change password, and delete account.

A 'User Profile' page with a white background. At the top right is an 'Edit' button. Below are several input fields: Nickname, First Name, Last Name (with a clear button), Country (set to 'Korea, Republic of'), Job Title (set to 'General dentist'), Email (set to 'cs@assemblecircle.com'), Facebook Link, and Bio. At the bottom, under 'Account setting', are two buttons: 'Password Change' and 'Delete Account'. The 'Edit' button, the 'Account setting' section, and the two bottom buttons are highlighted with red boxes.

3. Clinic information can be updated, and logos and member signatures can be registered.

**Clinic info.** Edit

Clinic Name

Clinic Logo

Signature

*Signed*

## 7. Membership Upgrade

1. After accessing the web page, log in with the account that has been registered for membership.

WEBCEPH

Exclusive suite of professional. WEBCEPH PREMIUM

1 case Digitization | 0 case Analysis | 0 case Treatment | 0 case Completed

NEWS & UPDATES

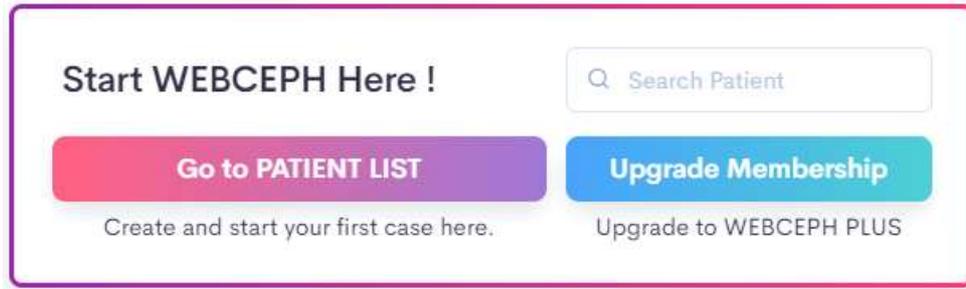
NEW FEATURE: Analysis Share with Colleagues

NEW FEATURE: CUSTOM TAG & SEARCH

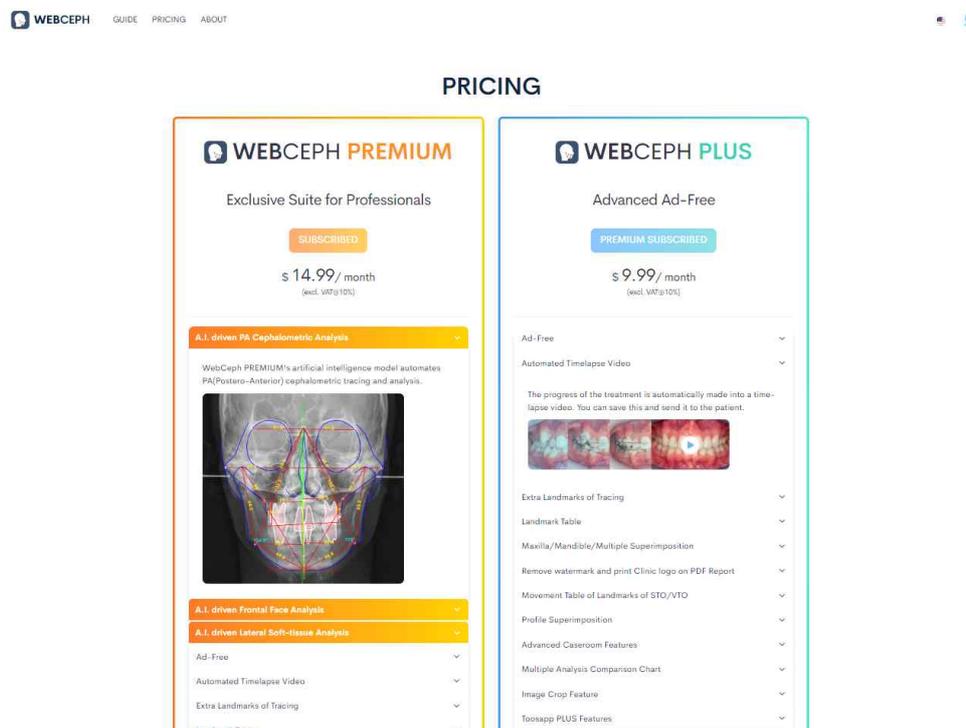
NEW FEATURE: Changing Mandible Rotation Center

Scheduler: Aug 27 - Sep 2, 2023

2. Click the Upgrade button within the homepage.



3. After checking the benefits of the membership upgrade, click on the activated Terms of Use.



## Terms of Service

The latest update date: April 27, 2021

Welcome to the WebCeph Web Site ("Web Site"), a web site operated by WebCeph (referred to as "WebCeph", "we" or "us" in these Terms of Use).

Please carefully review the following terms and conditions concerning your use of the Web Site. By accessing, using or downloading any information and/or materials from the Web Site, you agree to follow and be bound by the terms and conditions below (the "Terms of Use"). If you do not agree with these Terms of Use, please do not use or access this Web Site (or any material contained on it).

It is important for you to note that when using certain sections of this Web Site, your use may be subject to other proprietary notices and copyright information. If this is the case, you will be required to read and confirm your acceptance of any such notices before accessing the relevant section.

Please note that we may amend these Terms of Use from time to time. If we do, we will publish the changes on the Web Site so please review the Web Site periodically for changes. By continuing to use the Web Site after we have made such changes, you will be deemed to be expressing acceptance of the updated Terms of Use. The date at the top of this webpage indicates when these Terms of Use were last updated.

### 4. Check the terms of use. (You can download the patient consent form in PDF format by selecting the language option.)

WebCeph services may include data not owned by WebCeph. In this case, the user who provides the data shall be solely responsible for the data. Your use of WebCeph services does not mean that you have the rights to the data provided by other users. To use data made available by other users, you must obtain separate permission from the data's owner.

- WebCeph's all patient information including image file must be entered by the service user after obtaining the patient's consent. You can download the Informed Consent format by clicking the button below.

Informed Consent and Agreement (English)

Informed Consent and Agreement (Korean)

Informed Consent and Agreement (Arabic)

Informed Consent and Agreement (French)

Informed Consent and Agreement (Italian)

- All information including image file entered by the service provider into the user is used only for historical management and past information inquiry by the WebCeph and is not provided to the third party.
- As a result of the services provided by WebCeph, dispute resolution between patients and hospitals (doctors) is fundamentally a hospital (doctor) obligation and not for WebCeph service providers.

### 5. After reading the terms and conditions, check on the box to agree.

### Order Information

WEBCEPH PLUS - Monthly Plan	\$ 9.99 (excl. VAT@10%)
VAT 10%	\$ 0.99
<hr/>	
<b>Total amount paid</b>	<b>\$ 10.98 (incl. VAT@10%)</b>

By clicking Credit Card Registration, you agree to our [Terms](#).

신용카드 등록 (Global)

신용카드 등록 (한국 전용, for Korean)

### 6. Register credit card information to finish payment and click Subscribe.

Select Payment Method

**WEBCEPH PLUS**

**\$ 10.98 / month**  
(incl. VAT@10%)

The upgrade will be processed after the payment.  
Please wait until the **Completion Page** appears.

**PayPal 정기결제**

직불카드 또는 신용카드

제공: **PayPal**

Other options ▾

7. Check your current membership status.

**Membership**

Current Membership

**WEBCEPH PLUS**

**Membership**

Current Membership

**WEBCEPH PREMIUM**

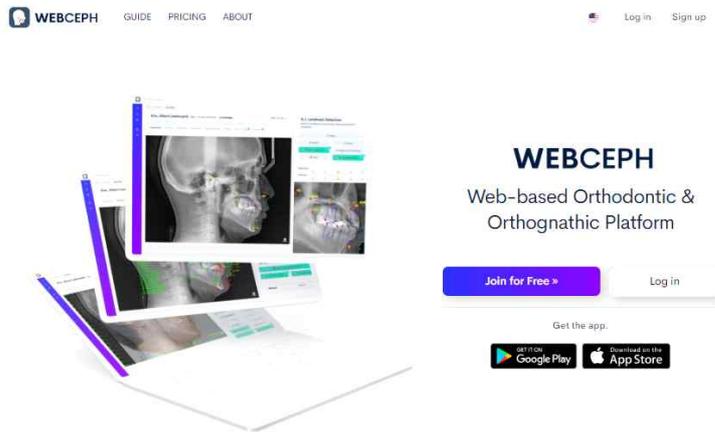
## Chapter 2.

### How to start WebCeph?

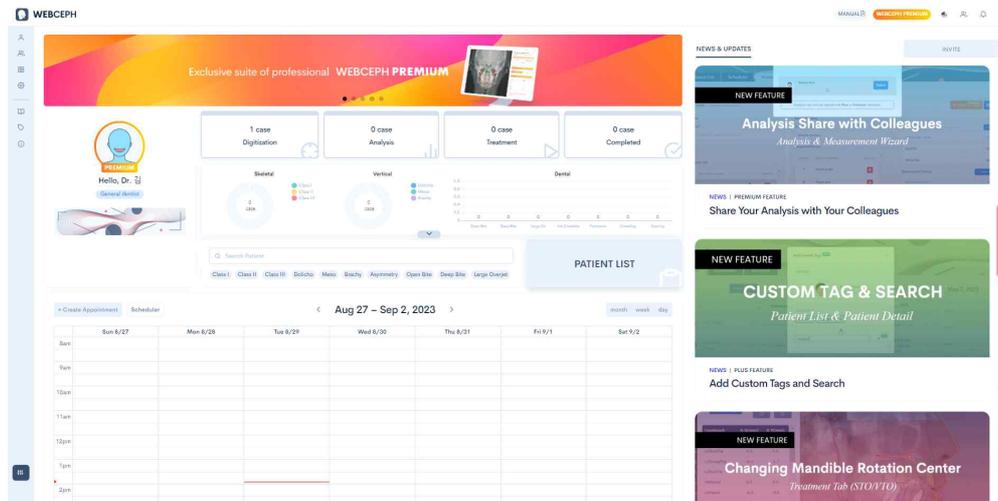
1. WebCeph Start
2. Case Room
3. User Interface Display Mode

# 1. WebCeph Start

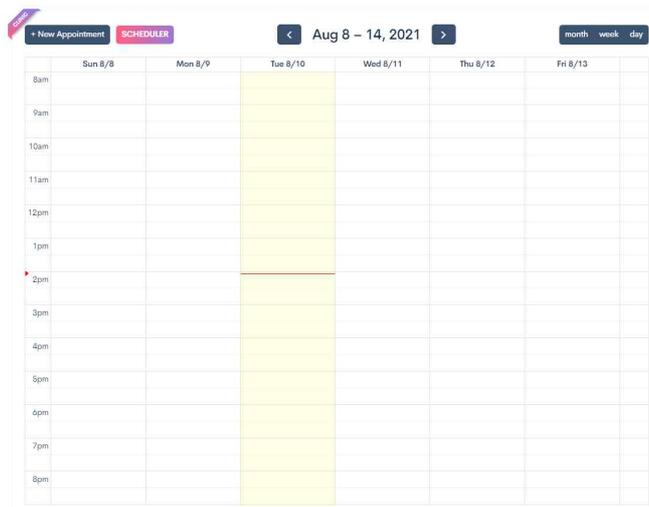
1) If you connect to [www.webceph.com](http://www.webceph.com) using various browsers, the login/membership page is displayed on the screen.



2) After logging in, you will see the initial screen.

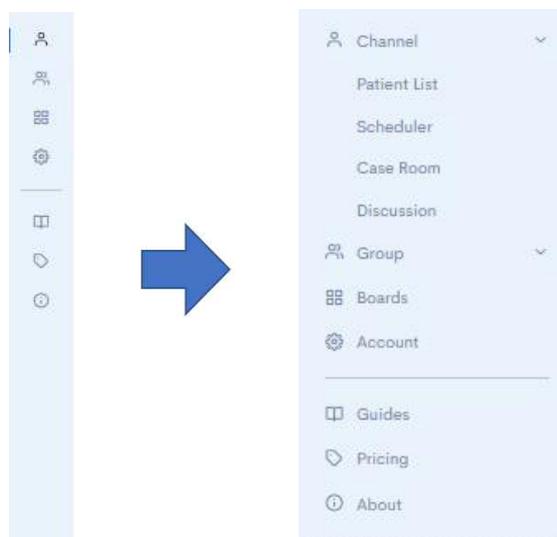


3) By scrolling down, you can access various features such as gallery, scheduler and more.

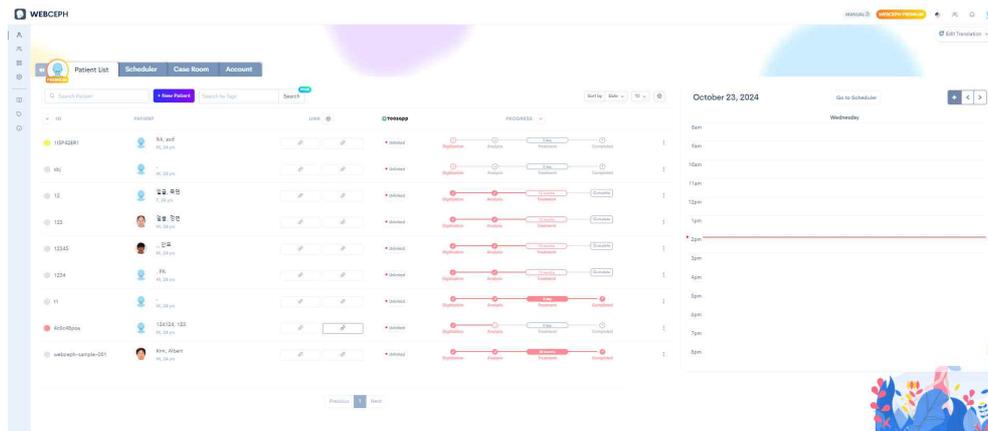


#### 4) WebCeph Main Menu

If you mouse over the human-shaped emoticon on the left side of the main page, the hidden list will be activated.



5) Click on a channel to go to the Patient List tab. (A summary of the scheduler for the day is displayed on the right side of the list.)

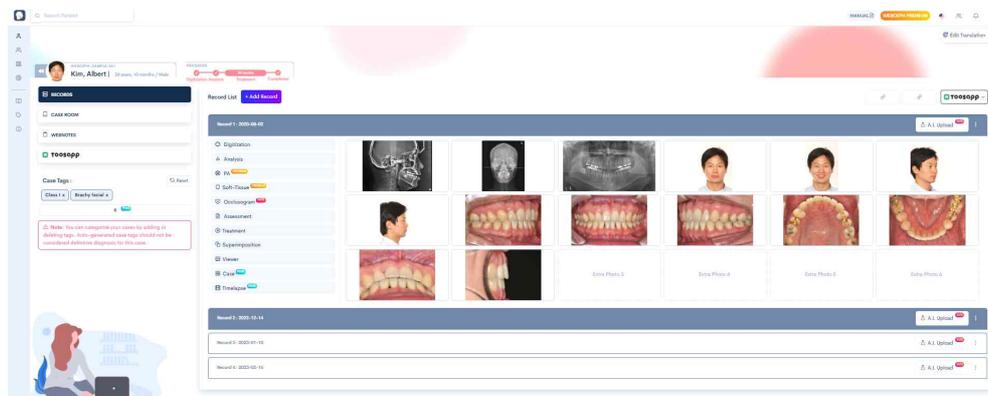


6) You can enter patient information by clicking **+ New Patient**. If you click



, you can only search for the specified tag. (WebCeph PLUS only)

7) When an individual patient is selected, that patient's information, records and clinical picture are displayed.



8) If you want to use a picture that is taken, you can open the image stored on the local PC in WebCeph, check first, and then upload it.



9) Click on the corresponding upload field to upload. (Provided file format: JPG, PNG, BMP)



10) The selected image appears in a box within the Records tab.

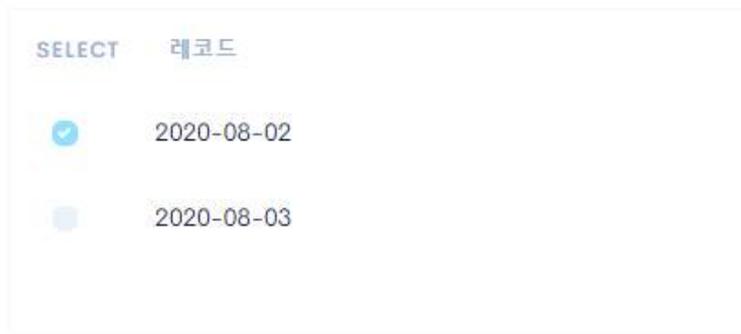


11) Upload an image and click Create Record to display a list of records in chronological order.

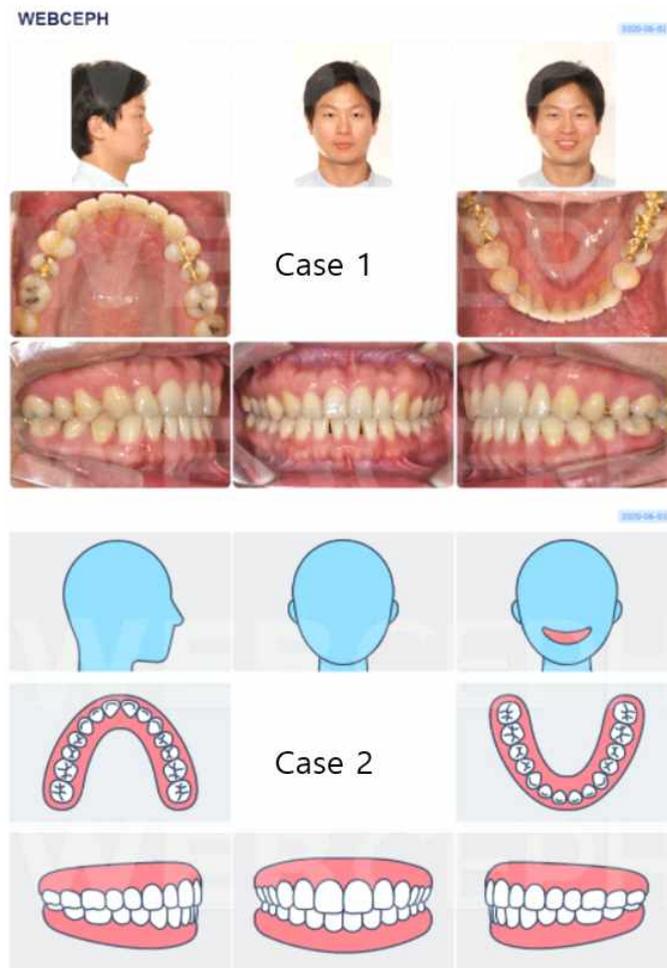


## 2. Case Room

- 1) If you click Case Room in the channel list, the Case Room page appears. If you click on **+ Add Case**, you can create a time-lapse of the patient's treatment. (Two or more records are required.)
- 2) You can select two or more records to compare at a glance.



3) You can compare clinical pictures you want at once.



4) When  is clicked,

 is activated. You can select a record to create a time-lapse of the treatment process.

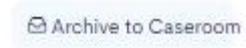
5) You can also add only the templates you want by clicking



6) The completed case can be saved as an image on the local PC via



and on the server via



7) **Watermark**  **Hide Date**  Through each toggle, the presence or absence of a watermark and the date hiding function can be used.

### 3. User Interface Display Mode

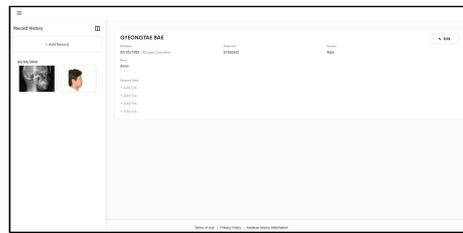
A Simplified View Mode is provided to present a simplified screen layout for improved user convenience.

The Simplified View Mode is a viewing option that simplifies the display of certain screen elements to enhance usability.

By reducing and reorganizing selected interface elements based on a minimal user navigation workflow, the mode enables faster measurements and supports more efficient patient consultation.



[Standard UI]



[Simplified UI]



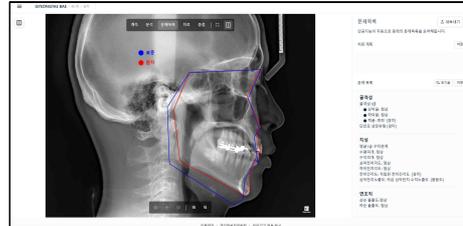
[Standard UI]



[Simplified UI]



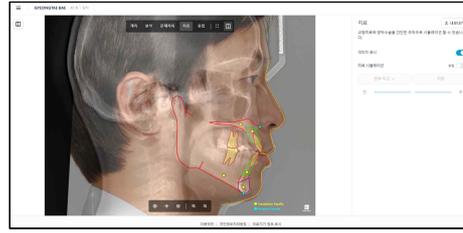
[Standard UI]



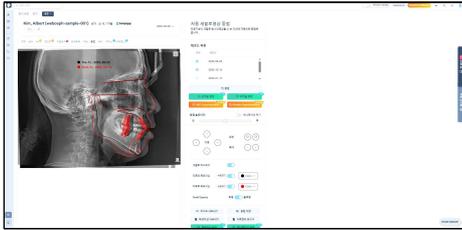
[Simplified UI]



[Standard UI]



[Simplified UI]



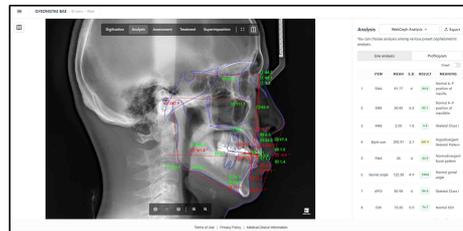
[Standard UI]



[Simplified UI]



[Standard UI]



[Simplified UI]

## Chapter 3.

### Main functions of WebCeph

1. Digitization
2. Analysis
3. PA
4. Soft-Tissue
5. Occlusogram
6. Assessment
7. TreatmentSimulation(VTO/STO)
8. Superimposition
9. Viewer
10. Case
11. Time-lapse
12. How-to video

## 1. Digitization

This tab measures the uploaded clinical picture.

### 1. Medical Imaging Digitization



You can use the same functions as on the web.

- Section 1: Allows you to move to a higher level.
- Section 2: This is the patient information area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: This is the area to display the medical image of the selected patient.
- Section 5: This is the area for image processing, simulation and storage.
- Section 6: This is the area where the zoom function is provided according to the mouse cursor.

– Detailed functions by section

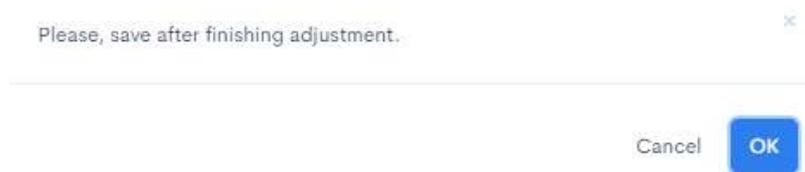
tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

### 1) Auto Digitization

When entering the page, the selected clinical image will be displayed on the screen and the measurement point will be automatically displayed. If the measurement is not automatically displayed, click the

to start measurement. When measurement is complete, will change to this icon

If you want to change the coordinates of the measured point, you can change the measured point through the icon. When you click on the button, the following pop-up will be displayed.



change the measurement point, Click on the icon to save it to the server.

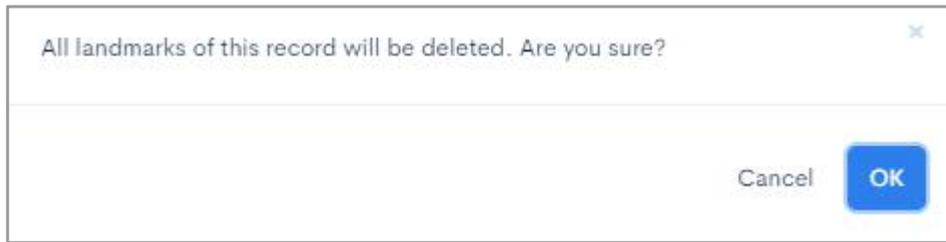
Reset measurement point

When you want to initialize the measured point, click on the

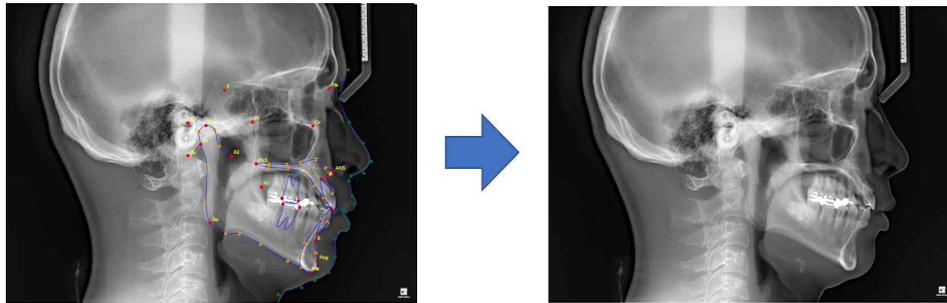
icon. When you click on the

 Reset

, the following pop-up will be displayed.

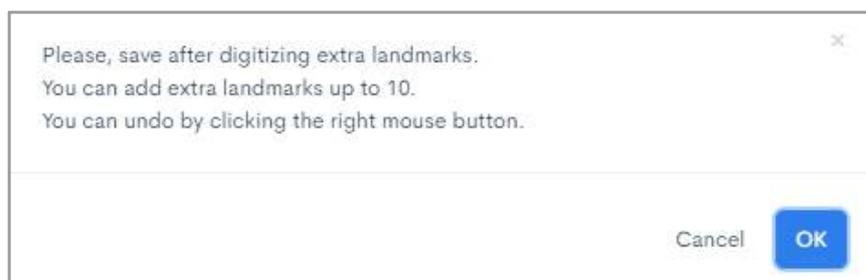


Click on the OK button to initialize the measurement points as shown below.



## 2) Adding measuring point

In addition to automatically measured points, users can add measurement points arbitrarily. When you click on the  in section 5, the following pop-up will be shown.

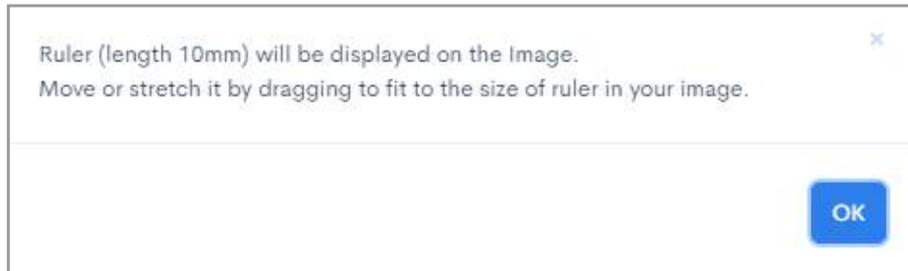


Added instrumentation points can be undone by right clicking then on the newest added section.

## 3) Image distance correction

Resize the uploaded image to a specified size to reduce measurement errors and judgment errors.

When you click on the **Image Size Calibration** , the following pop-up is displayed.



A 10mm long tape measure corresponds to the tape measure on the image.

#### 4) Measurement data storage

Click on the **Save** to save the measurement data. When clicked, the following pop-up will be displayed. Measurement data is stored on the server.

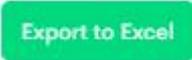


#### 5) Measurement point table

The location of each landmark stored on the server can be output as a table, and it can be saved as an Excel file on the local PC. Click on the



to display the measurement point table as shown below.

click on  , The downloading procedure will look like this



, and it will be saved as an Excel file as follows.. The file will be saved to the default saving location of the local PC. When you open the saved file, it will be displayed as shown below.

Landmark	Coordinates X	Coordinates Y	Landmark	Coordinates X	Coordinates Y
A-point	70.11 mm	60.01 mm	PNS	21.59 mm	50.76 mm
ANS	74.32 mm	56.09 mm	Po	-24.96 mm	22.72 mm
An	10.38 mm	98.99 mm	Pog	63.38 mm	117.78 mm
Ar	-16.27 mm	37.30 mm	Prn	100.12 mm	49.08 mm
B-point	61.98 mm	104.32 mm	Pt	19.07 mm	21.87 mm
Ba	-24.96 mm	45.15 mm	R1	25.24 mm	66.74 mm
C	36.74 mm	140.78 mm	R3	4.77 mm	45.43 mm
Co	-12.62 mm	24.40 mm	RamusDown	-12.62 mm	77.40 mm
Columella	95.07 mm	57.21 mm	S	0.00 mm	0.00 mm
CorpusLeft	0.84 mm	98.71 mm	Sd	73.75 mm	71.23 mm
DC	-9.69 mm	37.85 mm	SoftTissueA	84.97 mm	62.54 mm
DorsumOfNose	94.79 mm	36.46 mm	SoftTissueB	75.16 mm	102.36 mm
G	84.41 mm	-14.02 mm	SoftTissueGn	71.23 mm	125.63 mm
Gn	62.82 mm	122.83 mm	SoftTissueMe	61.70 mm	131.24 mm
Go	-9.82 mm	91.42 mm	SoftTissueNa	78.80 mm	5.89 mm
Id	70.67 mm	90.86 mm	SoftTissuePog	75.44 mm	114.98 mm
L1IncisalTip	72.91 mm	81.89 mm	Stmi	81.05 mm	84.13 mm
L1RootTip	63.66 mm	98.99 mm	Stms	-83.01 mm	83.85 mm
L6Distal	39.82 mm	78.52 mm	SubmandibularPoint	52.72 mm	136.01 mm
L6Mesial	51.32 mm	80.77 mm	Subnasale	86.37 mm	59.17 mm
LabraleInferius	83.01 mm	96.19 mm	U1IncisalTip	74.88 mm	83.29 mm
LabraleSuperius	87.22 mm	72.91 mm	U1RootTip	65.90 mm	61.42 mm
LowerEmbrasure	74.88 mm	83.85 mm	U6Distal	39.26 mm	74.60 mm
LowerLip	84.97 mm	91.70 mm	U6Mesial	50.48 mm	76.28 mm
Me	58.33 mm	125.63 mm	UpperEmbrasure	75.72 mm	82.17 mm
Na	71.79 mm	-1.12 mm	UpperLip	88.62 mm	78.24 mm
NasalBridgePoint	85.25 mm	22.15 mm	Xi	6.30 mm	72.18 mm
Or	60.29 mm	24.68 mm	constructed Go	-11.19 mm	93.08 mm
PM	62.54 mm	112.17 mm			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Kim, Albert(webceph-sample-001)	20Y, 7M (Male)	2020-08-02																				
2	Landmarks	Coordinates X	Coordinates Y																				
3	A-point	70.11 mm	60.01 mm																				
4	ANS	74.32 mm	56.09 mm																				
5	An	10.38 mm	98.99 mm																				
6	Ar	-16.27 mm	37.30 mm																				
7	B-point	61.98 mm	104.32 mm																				
8	Ba	-24.96 mm	45.15 mm																				
9	C	36.74 mm	140.78 mm																				
10	Co	-12.62 mm	24.40 mm																				
11	Columella	95.07 mm	57.21 mm																				
12	CorpusLeft	0.84 mm	98.71 mm																				
13	DC	-9.69 mm	37.85 mm																				
14	DorsumOfNose	94.79 mm	36.46 mm																				
15	G	84.41 mm	-14.02 mm																				
16	Gn	62.82 mm	122.83 mm																				
17	Go	-9.82 mm	91.42 mm																				
18	Id	70.67 mm	90.86 mm																				
19	L1IncisalTip	72.91 mm	81.89 mm																				
20	L1RootTip	63.66 mm	98.99 mm																				
21	L6Distal	39.82 mm	78.52 mm																				
22	L6Mesial	51.32 mm	80.77 mm																				
23	LabraleInferius	83.01 mm	96.19 mm																				
24	LabraleSuperius	87.22 mm	72.91 mm																				
25	LowerEmbrasure	74.88 mm	83.85 mm																				
26	LowerLip	84.97 mm	91.70 mm																				
27	Me	58.33 mm	125.63 mm																				
28	Na	71.79 mm	-1.12 mm																				
29	NasalBridgePoint	85.25 mm	22.15 mm																				
30	Or	60.29 mm	24.68 mm																				
31	PM	62.54 mm	112.17 mm																				
32	PNS	21.59 mm	50.76 mm																				
33	Po	-24.96 mm	22.72 mm																				
34	Pog	63.38 mm	117.78 mm																				
35	Prn	100.12 mm	49.08 mm																				
36	Pt	19.07 mm	21.87 mm																				
37	R1	25.24 mm	66.74 mm																				
38	R3	4.77 mm	45.43 mm																				
39	RamusDown	-12.62 mm	77.40 mm																				
40	S	0.00 mm	0.00 mm																				
41	Sd	73.75 mm	71.23 mm																				
42	SoftTissueA	84.97 mm	62.54 mm																				
43	SoftTissueB	75.16 mm	102.36 mm																				
44	SoftTissueGn	71.23 mm	125.63 mm																				
45	SoftTissueMe	61.70 mm	131.24 mm																				
46	SoftTissueNa	78.80 mm	5.89 mm																				
47	SoftTissuePog	75.44 mm	114.98 mm																				
48	Stmi	81.05 mm	84.13 mm																				
49	Stms	-83.01 mm	83.85 mm																				
50	SubmandibularPoint	52.72 mm	136.01 mm																				
51	Subnasale	86.37 mm	59.17 mm																				
52	U1IncisalTip	74.88 mm	83.29 mm																				
53	U1RootTip	65.90 mm	61.42 mm																				
54	U6Distal	39.26 mm	74.60 mm																				
55	U6Mesial	50.48 mm	76.28 mm																				
56	UpperEmbrasure	75.72 mm	82.17 mm																				
57	UpperLip	88.62 mm	78.24 mm																				
58	Xi	6.30 mm	72.18 mm																				
59	constructed Go	-11.19 mm	93.08 mm																				

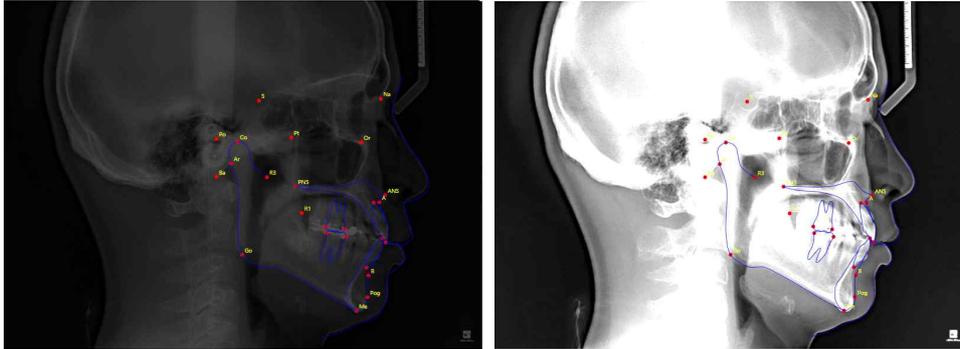
## 2. Adjusting the brightness of the video

Adjust to brighten or darken the entire image. The default value for Brightness

is 100 and can be adjusted from 30 to 170 via the slider below.



The difference between brightness +30 and +170 is shown below. (same contrast)

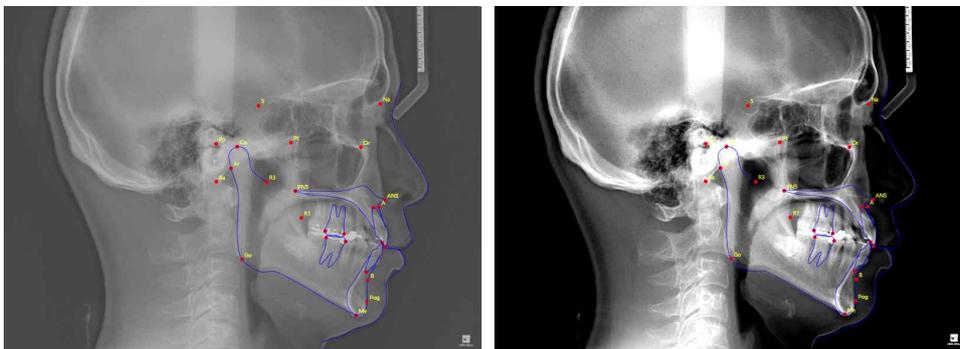


### 1) Image contrast adjustment

Creates an effect that sharpens the contrast between black and white in the image. Blurred nerves or tissues can be seen more clearly. Contrast defaults to 100, adjustable from 50 to 150 via the slider below.



The difference between contrast +50 and +150 is shown below. (same brightness)

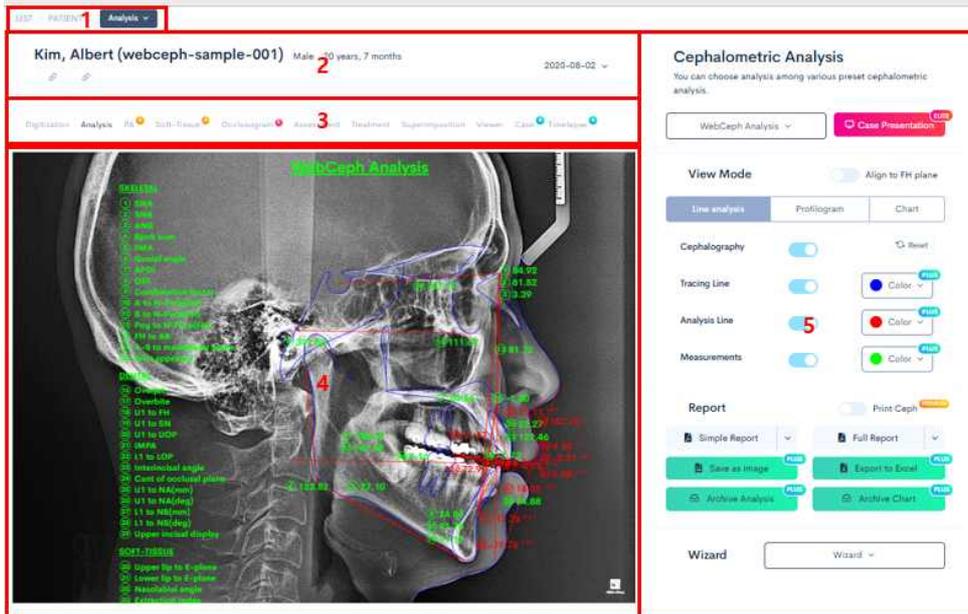


### 2) Image reset

Click on the  to remove the applied image processing and return to the initial image state.

## 2. Analysis

In the analysis tab, you can analyze the measured clinical image through various analysis methods.



- Section 1: Allows you to move to a higher level.
- Section 2: This is the patient information area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: This is the area to display the medical image of the selected patient.
- Section 5: This is the area for image analysis by outputting the patient's image to the selected layout.

- Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

### 1) Change analysis type

WebCeph provides various analysis methods for uploaded clinical images. When

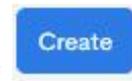
you enter the analysis tab, there is a tab where you can change the analysis method at the top of section 5. By clicking the tab, you can change to various methods as shown below.



## 2) Wizard

There are also methods provided by WebCeph by default, but the user can customize the method. Click on the  in the lower right corner of section 5 to customize methods and metrics.

## 3) Method and measurement customization



The user selects an analysis name arbitrarily and clicks on the **Create** icon. If you select an existing measurement from the list, it will be displayed as “Method currently being edited” on the right. If the created method is displayed on the

icon, Select a metric in the

“Full Library of Measurements” box located on the right and click the **← Add** icon to add a metric.



The user can create a new metric via the **+ Create Measurement** icon.



When you click on the **+ Create Measurement** icon, the following screen will be displayed.

After entering the appropriate information, click on the



icon to complete the measurement setting.

After adding all the metrics, click on the



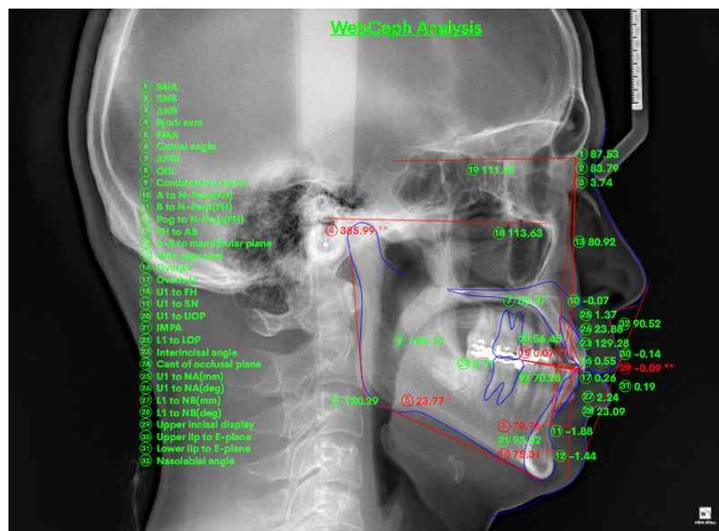
icon to add the method to the analysis type selection box.

#### 4) Mode

Directly below the method, the three analysis modes can be displayed in 4 sections. The three modes are divided into line analysis, profilogram and chart.

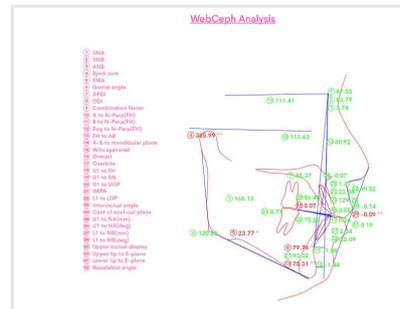
#### 5) Line analysis

Line Analysis displays the analysis lines connected by the instrumentation points measured in the previous tab. Over 30 analysis lines are displayed and appear as shown below.



Clinical picture (Cephalo X-ray), tracing line, analysis line, and measurement value can be turned on/off through the toggle key and you can change it.

Available in 11 colors.



This is the result of turning off the clinical picture (cephalo X-ray) through the toggle key.

## 6) Chart

In the chart tab, you can check at a glance how much difference the measured values of the patient are compared to the same age, same sex, etc. It can be analyzed conveniently by using the graph and is displayed as shown below.

WebCeph Analysis

Measurement	Mean	S.D.	Result	Severity	Polygonal chart	Meaning
SNA	81.77	6.0	87.53			Normal A-P position of maxilla
SNB	80.42	5.3	83.79			Normal A-P position of mandible
ANB	2.05	1.8	3.74			Skeletal Class I
Bjork sum	393.97	3.7	385.99	**		Hypodivergent Skeletal Pattern
FMA	26.76	3.0	23.77	*		Hypodivergent facial pattern
Gonial angle	122.38	4.9	120.29			Normal gonial angle
APDI	85.98	4.0	85.37			Skeletal Class I
ODI	73.35	5.9	79.76	*		Deepbite tendency
Combination factor	159.33	7.1	165.13			Normal combination factor value
A to N-Perp(FH)	1.1	2.7	-0.07			Normal A-P position of maxilla
B to N-Perp(FH)	-3.5	2.0	-1.88			Normal A-P position of mandible
Pog to N-Perp(FH)	-0.3	2.5	-1.44			Normal A-P position of chin
FH to AB	61	3.0	60.92			Skeletal Class I
A-B to mandibular plane	69.3	2.5	75.31	**		Large AB to mand. plane angle
Wits appraisal	-2.24	0.3	0.07	***		Skeletal Class II
Overjet	2	2.0	0.55			Normal overjet
Overbite	2	2.0	0.26			Normal overbite
U1 to FH	116.52	6.0	113.63			Normal upper incisor inclination
U1 to SN	109.31	6.0	111.41			Normal upper incisor inclination
U1 to UOP	55	4.0	56.46			Normal upper incisor
IMPA	90.2	3.4	93.32			Normal lower incisor inclination
L1 to LOP	66	5.0	70.28			Normal lower incisor
Interincisal angle	128	5.3	129.28			Normal interincisor angle
Cant of occlusal plane	9.3	3.8	8.71			Normal occlusal plane angle
U1 to NA(mm)	4	3.0	1.37			Normal upper incisor
U1 to NA(deg)	22	5.0	23.88			Normal upper incisor inclination
L1 to NB(mm)	4	2.0	2.24			Normal lower incisor
L1 to NB(deg)	25	5.0	23.09			Normal lower incisor inclination
Upper incisal display	3	1.5	-0.09	**		Small incisal display
Upper lip to E-plane	0	2.0	-0.14			Normal upper lip position
Lower lip to E-plane	0	2.0	0.19			Normal lower lip position
Nasolabial angle	95	5.0	90.52			Normal lip

Items with large deviations from the mean are displayed in red for easy identification.

## 7) Save

Analyzed data can be saved in various ways.

If you click on the  **Export Analysis Report** and

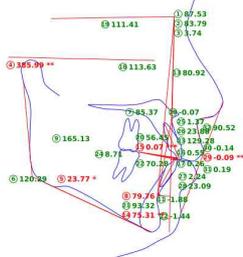
 **Export Full Report** icons, you can save the analysis as a PDF file.

The photo below is the report saved in PDF format.

WEBCEPH

WebCeph Analysis

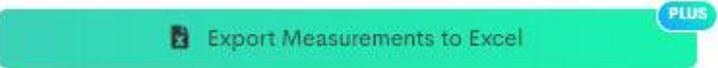
- ① SNA
- ② SNB
- ③ ANB
- ④ Bjork sum
- ⑤ PMA
- ⑥ Genial angle
- ⑦ MPFH
- ⑧ ODI
- ⑨ Combination factor
- ⑩ A to N-Perp(FH)
- ⑪ B to N-Perp(FH)
- ⑫ Pog to N-Perp(FH)
- ⑬ Fit to Ad
- ⑭ A-R to mandibular plane
- ⑮ Wits appraisal
- ⑯ Overjet
- ⑰ Overbite
- ⑱ UI to FH
- ⑲ UI to SN
- ⑳ UI to UOP
- ㉑ IMPA
- ㉒ LI to LOP
- ㉓ Interincisal angle
- ㉔ Cant of occlusal plane
- ㉕ UI to NA(mm)
- ㉖ UI to NA(deg)
- ㉗ LI to NB(mm)
- ㉘ LI to NB(deg)
- ㉙ Upper incisal display
- ㉚ Upper lip to E-plane
- ㉛ Lower lip to E-plane
- ㉜ Nasolabial angle

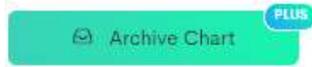


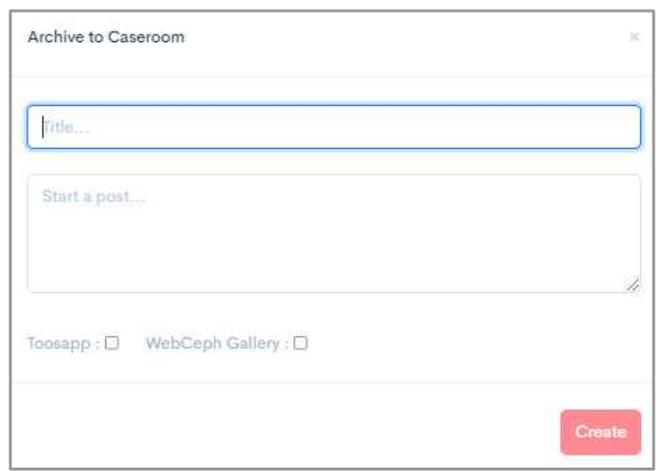
WebCeph 교정분석 보고서

환자정보

이름: Kim, Albert  
 성별: Male  
 나이: 21년 7개월  
 자료채득일: 2020-08-02

If you click on the  , you can also save the analysis it in the form of an Excel file.

Click on  or  to keep the analysis and charts in the Case Room. When clicked, the following pop-up is displayed and can be saved. (The pop-up format is the same for both analysis and chart.)

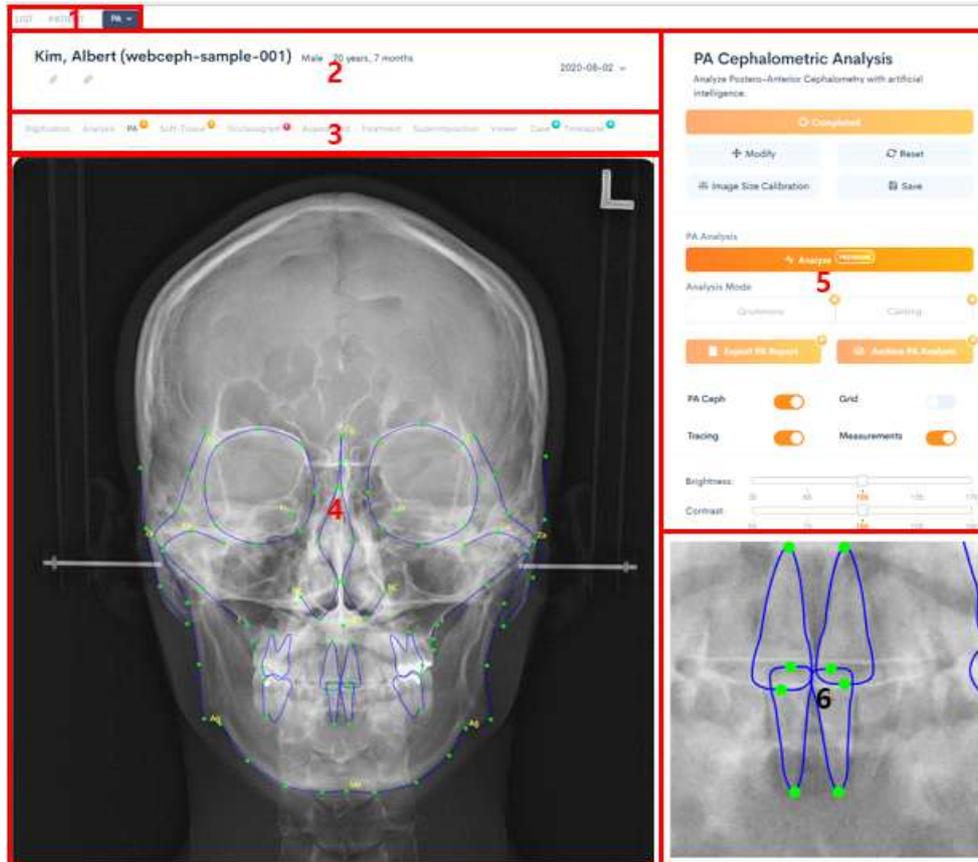


The screenshot shows a pop-up window titled "Archive to Caseroom" with a close button (X) in the top right corner. The form contains the following elements:

- A text input field labeled "Title..."
- A larger text area labeled "Start a post..." with a small icon in the bottom right corner.
- Two checkboxes: "Toosapp :
- Two checkboxes: "WebCeph Gallery :
- A red "Create" button in the bottom right corner.

### 3. PA

In this tab, users can measure and analyze the uploaded PA cephalometric radiograph.



- Section 1: Allows users to move to a higher tree level.
- Section 2: This is the patient information area, which displays the name, gender, age, and date of the video.
- Section 3: Allows users to move between tabs.
- Section 4: This is the area to display the medical image of the selected patient.
- Section 5: This area is a control panel where users can operate the image analysis functions.
- Section 6: This is the area where the zoom function is provided according to the mouse cursor.

– Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

### 1) Digitization

When a user enters this page, the uploaded PA cephalometric radiographic image will be displayed on the screen. Click the



to start measurement. When

measurement is complete,

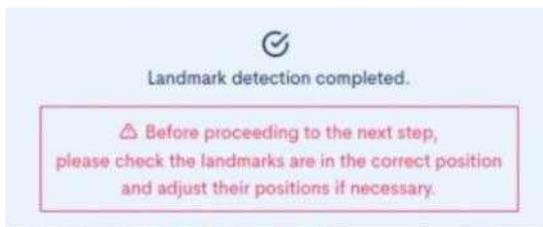


will change

to this icon



– A pop-up warning message box is displayed for the user to check the landmark detection results before going to next step.



To adjust the measurement point, press the



button.

In that case, the



button will change to the



button.

To reset all measurement points, press the



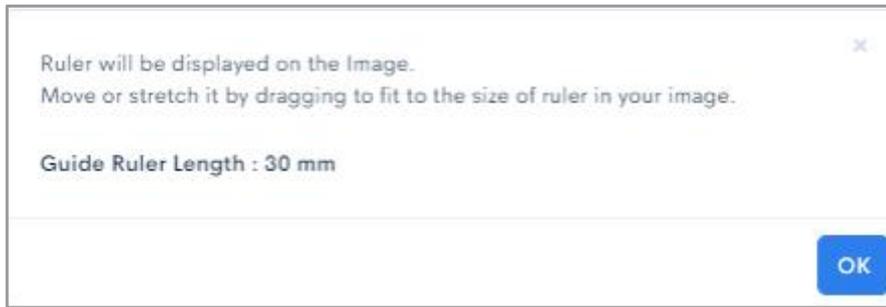
button.

Press the



button to resize the guide ruler size to

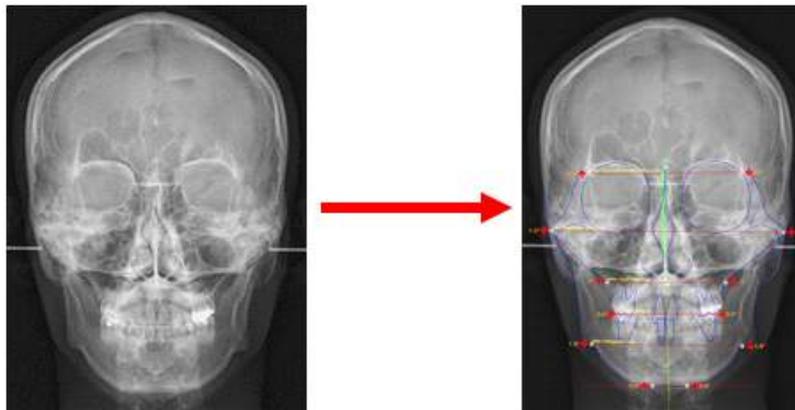
fit the real sized ruler in the image. Guide instruction pop-up will be displayed in the screen.



When all the landmarks are checked and confirmed by the user, by pressing the  Save button, the user can save landmark data.

### 2) PA Analysis

Press the  Analyze  button to display a chart comparing the results of PA Analysis with the normal reference values. Users can export the output result as a PDF file.



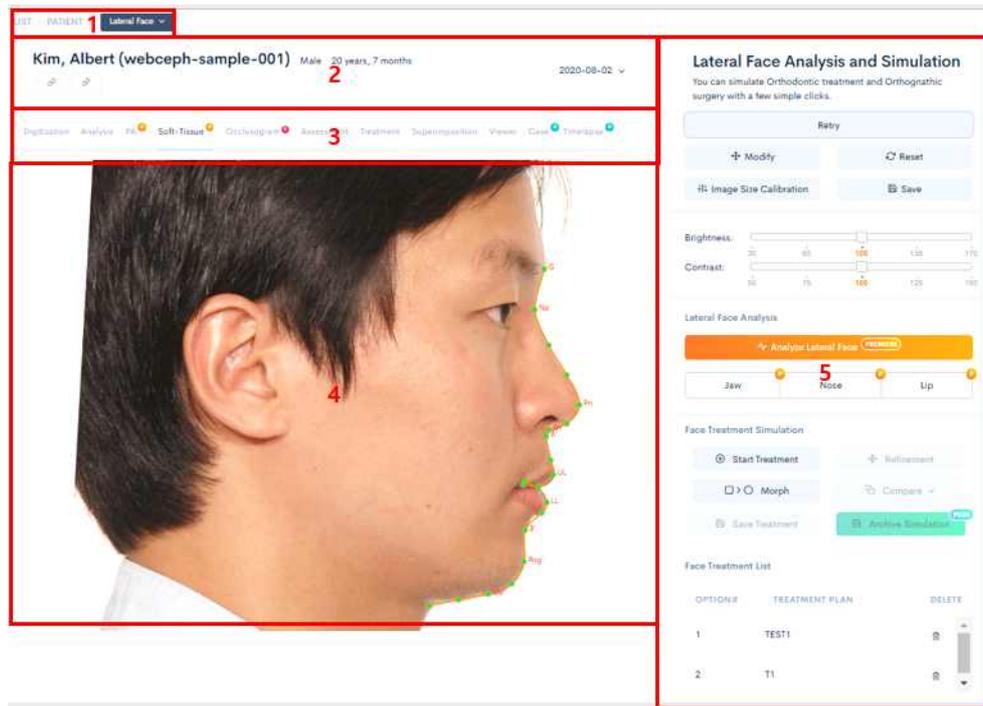
### 3) Analysis Mode

If the  Grummons  button is pressed, users can analyze the amount of asymmetry through Grummons analysis.

If the  Canting  button is pressed, users can assess the amount of canting of bilateral anatomic landmarks through Canting analysis. You can save as a PDF or store in the case room by clicking

 Export PA Report  button or  Archive PA Analysis  button.

#### 4. Soft- Tissue (Lateral Face)



- Section 1: Allows users to move to a higher tree level.
- Section 2: This is the patient information area, which displays the name, gender, age, and recording date of the subject.
- Section 3: Allows users to move between tabs.
- Section 4: This is the area to display the medical image of the selected patient.
- Section 5: This area is a control panel where users can operate the image analysis functions.

- Detailed functions by section

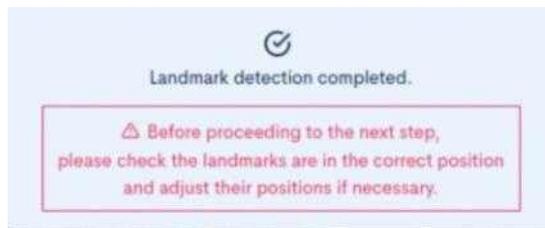
tool image	functions	Contents
LIST > PATIENT > RECORD	move to a higher level	move to the desired higher level
Digitization Analysis PA Soft-Tissue Occlusogram Assessment Treatment Superposition	move between tabs	move to the desired tab
2020-06-07	move records	Change which record is displayed

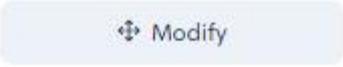
When the user this page, uploaded lateral facial clinical image will be displayed

on the screen. Click the  to start measurement. When measurement is complete,



– A pop-up warning message box will be displayed for the user to check and confirm the landmark detection results before proceed to the next step.



If the user want to change the coordinates of the landmark points, the user can change the measured point by clicking the  and dragging the landmark points.

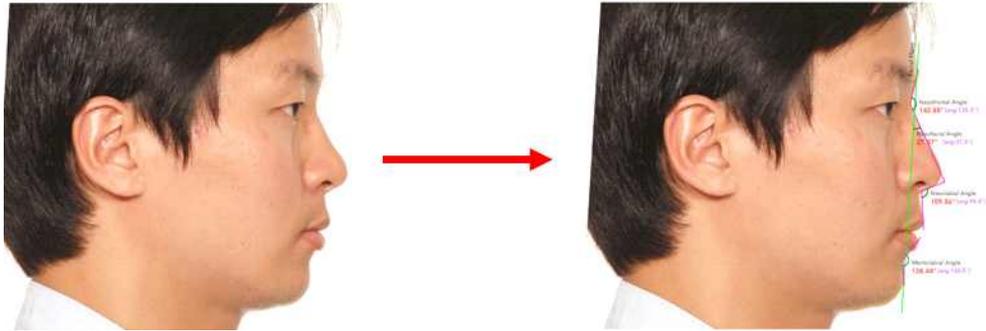
### 1) Lateral Face Analysis

Press  button to start the lateral face analysis in three different modes: Jaw, Nose, and Lip.

#### (1) Jaw Analysis



#### (2) Nose Analysis



(3) Lip Analysis



By pressing the  **Start Treatment** button, the user can start the Face Treatment Simulation. By dragging each five translation handles which is being displayed on the screen, the user can simulate the treatment.

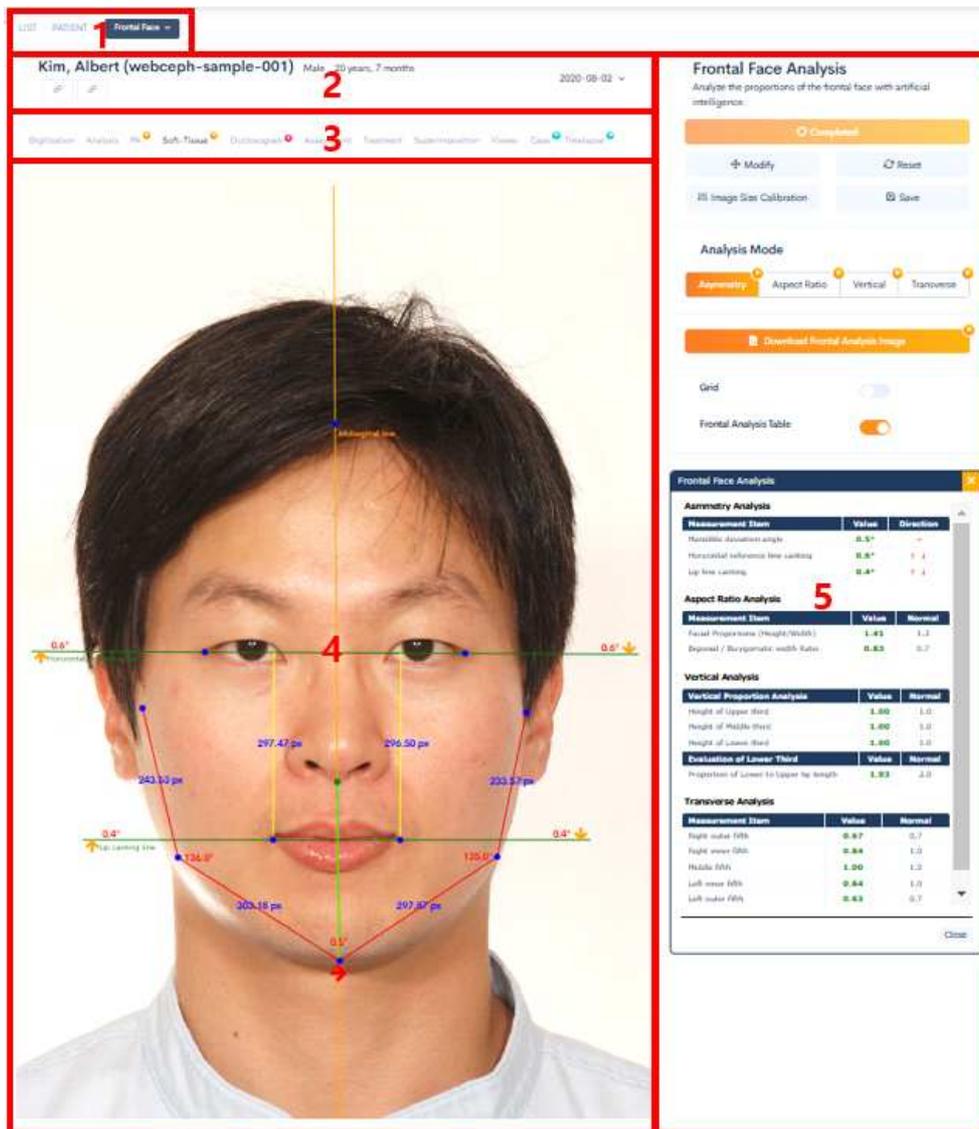
Click the  **Refinement** button and make more precise adjustments of the position of the soft-tissue outline points, and when adjustment is

completed, press the  **Morph** button to perform image warping(morphing).

After the morphing is complete, press the  **Compare** button. It will allow the user to check the treatment simulation outcome in these different modes: Comparison, Animation, Superimposition and Video format. When all treatment simulation is completed, the user can press the

 **Save Treatment** and  **Archive Simulation** buttons to save the treatment or export the outcome to the case room.

#### 4. Soft- Tissue (Frontal Face)



- Section 1: Allows users to move to a higher tree level.
- Section 2: This is the patient information area, which displays the name, gender, age, and recording date of the subject.
- Section 3: Allows users to move between tabs.
- Section 4: This is the area to display the medical image of the selected patient.
- Section 5: This area is a control panel where users can operate the image analysis functions.

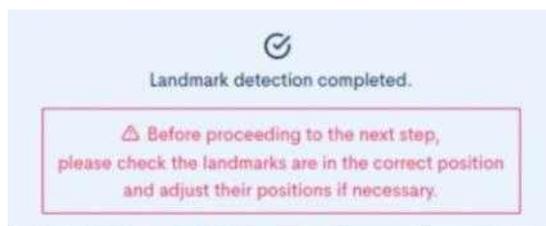
- Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

When a user enters this page, the uploaded Frontal Facial Clinical Image will be displayed on the screen. Click the to start measurement. When measurement is complete,

will change to this icon

– A pop-up warning message box is displayed for the user to check the landmark detection results before going to the next step.



To adjust the measurement point, press the button.

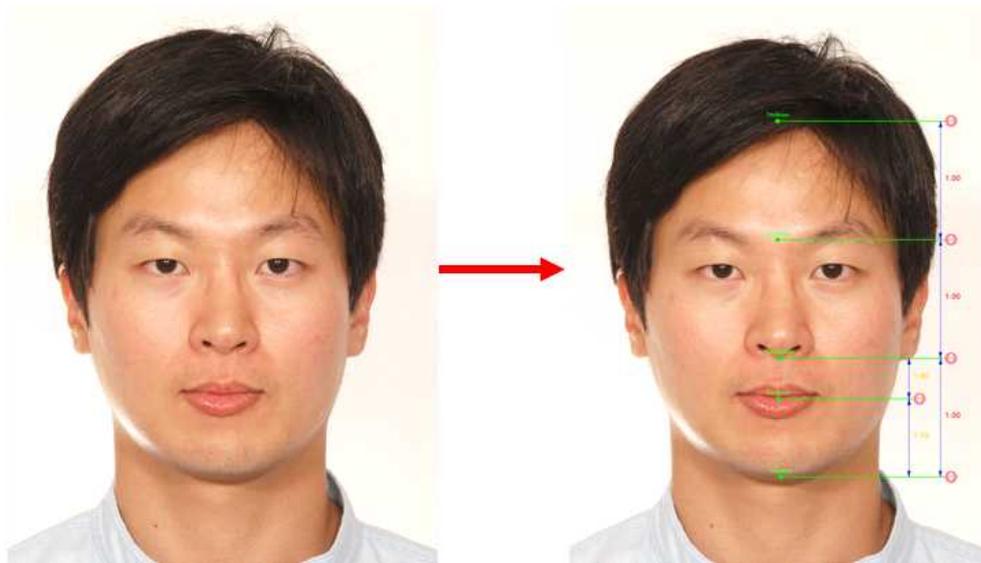
In that case, the button will change

to button.

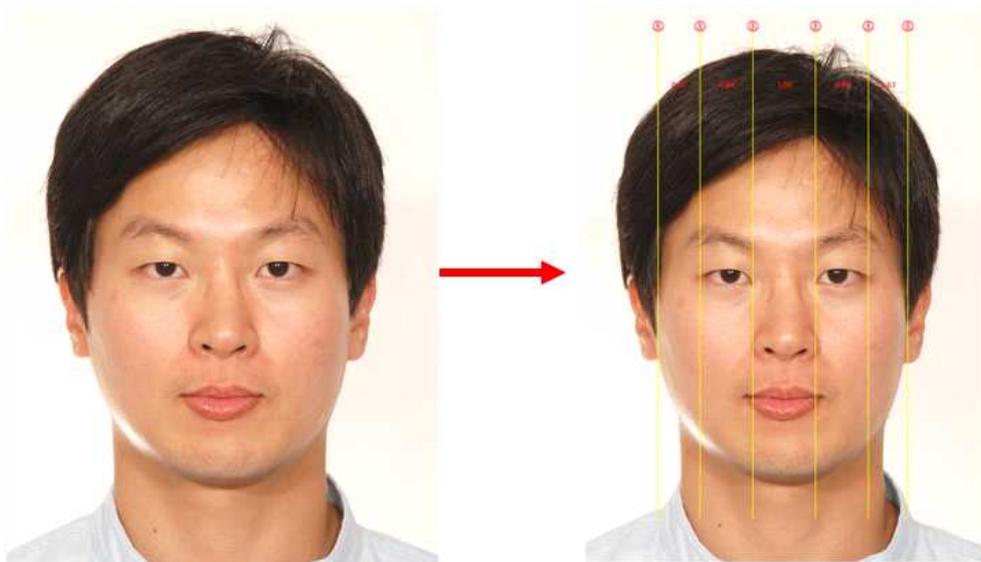
To reset all measurement points, press the button.

Press the button to resize the guide ruler size to fit the real sized ruler in the image. Guide instruction pop-up will be displayed in the screen.





#### 4) Transverse



There are a total of four different analysis modes for frontal face analysis: Asymmetry, Aspect Ratio, Vertical, and Transverse.

By pressing the  button, the user can save the frontal face analysis result in the form of JPG images to his/her local PC.

## 5. Occlusogram

**Tooth Size - Space Analysis**

	Tooth Width (mm)												Arch Perimeter (mm)	AID (Arch Length Overlap)	Classification						
	#16	#15	#14	#13	#12	#11	#21	#22	#23	#24	#25	#26									
Upper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-						
Lower							#66	#65	#64	#63	#62	#61	#31	#32	#33	#34	#35	#36	0	0	-

**Bolton Analysis**

Overall Ratio (%) =  $\frac{\text{Sum of Mandibular 12}}{\text{Sum of Maxillary 12}} \times 100 = -\%$

Anterior Ratio (%) =  $\frac{\text{Sum of Mandibular 6}}{\text{Sum of Maxillary 6}} \times 100 = -\%$

- Section 1: Allows users to move to a higher tree level.
- Section 2: This is the patient information area, which displays the name, gender, age, and recording date of the subject.
- Section 3: Allows users to move between tabs.
- Section 4: This is the area to display the medical image of the selected patient.
- Section 5: This area is a control panel where users can operate the image analysis functions.
- Section 6: You can check the analyzed values in a table.

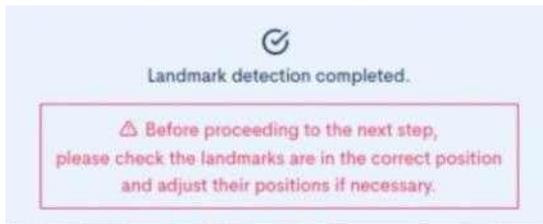
– Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

When a user enters this page, the uploaded Occlusogram Clinical Image will be displayed on the screen. Click the to start measurement. When measurement is complete,



– A pop-up warning message box is displayed for the user to check the landmark detection results before going to the next step.

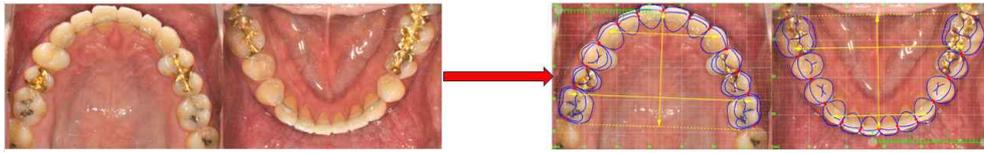


You can set each view mode using the three buttons below.

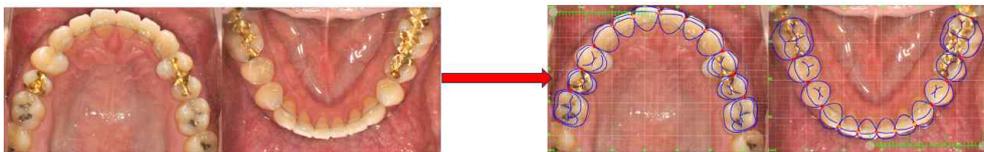
- ♦ mode 1 : (You can analyze the size of your teeth.)



- ◆ mode 2 : **Arch Width & Length** (You can analyze the arch width and length of your teeth)

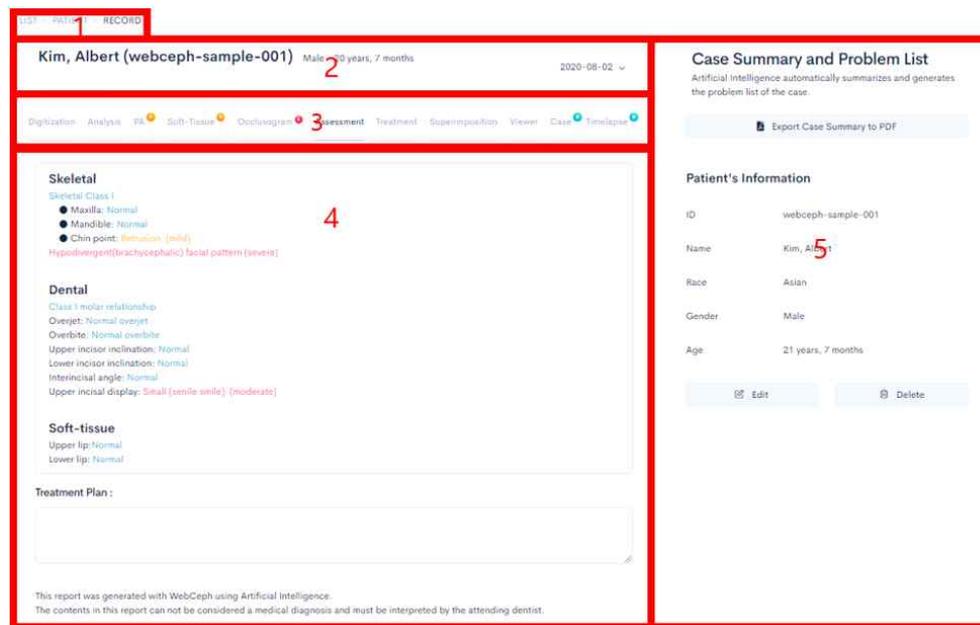


- ◆ mode 3 : **Irregularity Index** (You can analyze Irregularity of your teeth.)



## 6. Assessment

Based on the artificial intelligence model of WebCeph, it will automatically present the measured values in the problem list coming from the records of patients that have already been measured before.



- Section 1: Allows you to move to a higher level.
- Section 2: This is the patient information area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: Displays a list of problems based on analysis values.
- Section 5: Displays patient information and saves an organized list of problems.

- Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

## 1) Assessment

The list of problems is largely divided into a list of skeletal problems, a list of dental problems, and a list of soft tissue problems. \*Caution: The contents of this report should not be regarded as a medical definitive diagnosis and must be interpreted by a dentist. The picture below is an example picture of the problem list.

### Skeletal

Skeletal Class I

- Maxilla: Normal
- Mandible: Normal
- Chin point: Retrusion (mild)

Hypodivergent(brachycephalic) facial pattern (severe)

---

### Dental

Class I molar relationship

Overjet: Normal overjet

Overbite: Normal overbite

Upper incisor inclination: Normal

Lower incisor inclination: Normal

Interincisal angle: Normal

Upper incisal display: Small (senile smile) (moderate)

---

### Soft-tissue

Upper lip: Normal

Lower lip: Normal

- ◆ The list of skeletal problems is largely divided into the maxilla, mandible, and tip of the jaw, and is divided into skeletal class I and skeletal class II.
- ◆ The list of odontogenic problems is largely composed of horizontal over cover, vertical over cover, maxillary anterior angle, mandibular anterior angle, interanterior angle, and maxillary anterior exposure degree, and is divided into angle I and angle II.
- ◆ The soft tissue problem list is largely divided into upper labial protrusion and lower labial protrusion.

For each problem list, the user can add a diagnosis, and when the writing is completed, the  icon saves it.

The treatment plan box below is a user's arbitrary note to help with treatment and consultation.

Treatment Plan :



## 2) Case summary and problem list arrangement

On the right side, patient information is organized for easy viewing, and patient information can be easily changed. When you click on the



, icon, the following page is displayed.

**Update Patient**

Patient ID\*

First name

Last name

Race\*

Gender\*

Date of birth\* (yyyy-mm-dd)

**Update Patient**

3) Update via the



icon.

When all case summaries and problem lists are organized, they are saved as

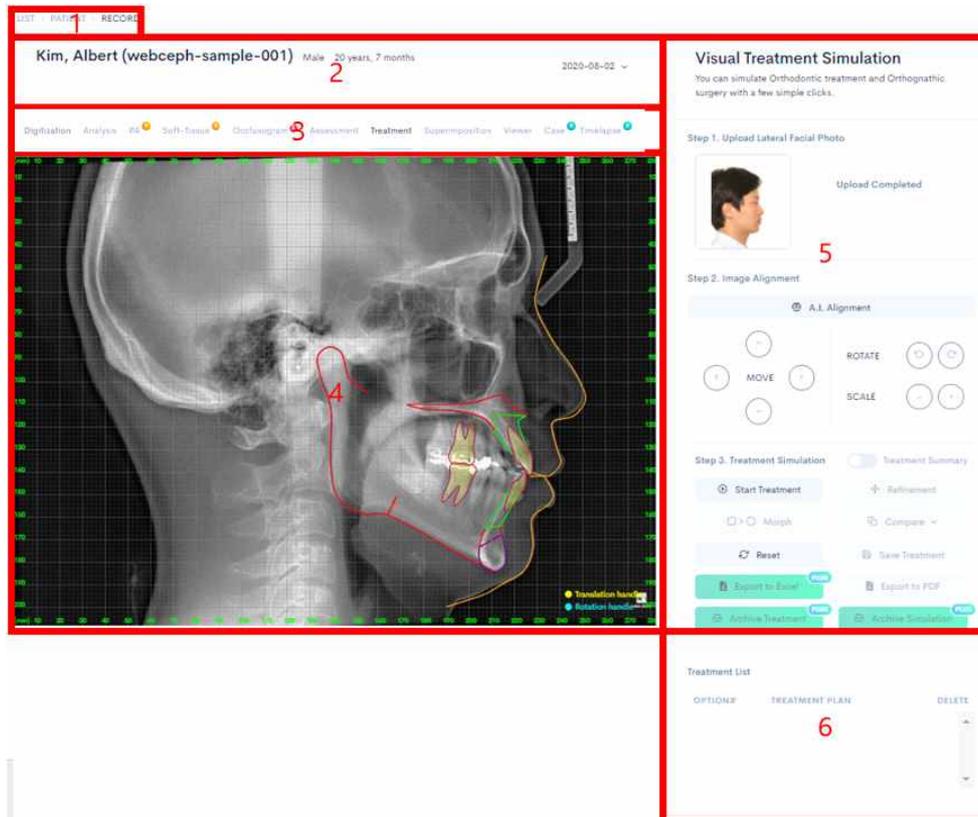
PDF files through the



icon.

PDF files are saved in the path specified by default on the local PC.

## 7. Treatment



- Section 1: Allows you to move to a higher level.
- Section 2: This is the patient information area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: Shows the list of analyzed problems and the expected course of treatment.
- Section 5: Proceed to the simulation of the patient's treatment.
- Section 6: Displays a list of saved treatments.

– Detailed functions by section

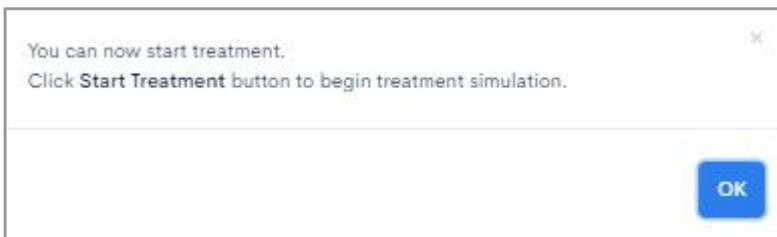
tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

1) Treatment simulation

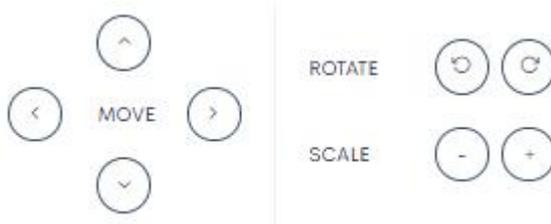
- WebCeph displays the lateral picture uploaded in the Patient Information step.
- If you click on the icon, the patient's lateral picture and the cephalothorax image will automatically aligned according to the measurement points. The pictures below are the pictures displayed on the screen before and after sorting.



After sorting you will see the pop-up below.



- In case of minor errors, click on the button below to operate.



Once the images are aligned, start treatment. When you click on the



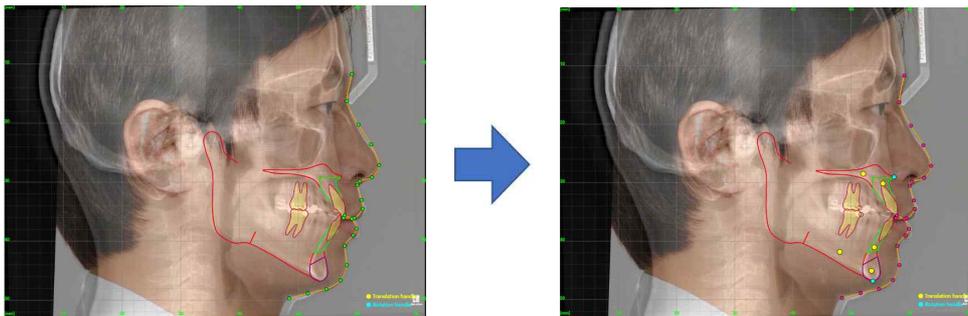
icon, the table below will be displayed on the screen and

the toggle will be turned on.  Treatment Summary You can turn it on/off by the toggle.

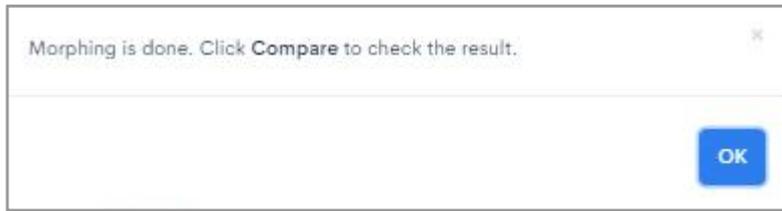
Landmark	Δ X	Δ Y
U1IncisalTip	0.00 mm	0.00 mm
U1RootTip	0.00 mm	0.00 mm
L1IncisalTip	0.00 mm	0.00 mm
L1RootTip	0.00 mm	0.00 mm
U6Mesial	0.00 mm	0.00 mm
L6Mesial	0.00 mm	0.00 mm
A-point	0.00 mm	0.00 mm
B-point	0.00 mm	0.00 mm
ANS	0.00 mm	0.00 mm
PNS	0.00 mm	0.00 mm
Pog	0.00 mm	0.00 mm

Export to Excel Close

If you click on the  Refinement icon, soft tissue lines will be displayed on the aligned image and can be fine-tuned by dragging. The photo below shows the change in color of the dot into pink that represents the soft tissue and became draggable.



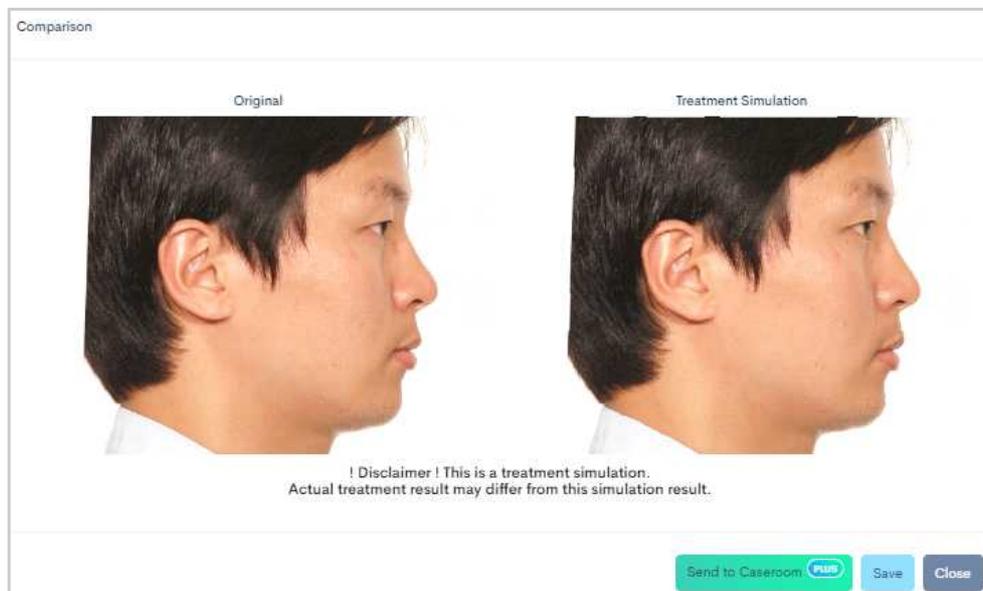
Morphing refers to the deformation of the lateral clinical picture based on the dragged soft tissue tracing line. Click on the  Morph icon and it will automatically finish morphing then you will see the pop-up below. Also the  Compare icon will be activated.



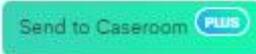
When the  icon is clicked, the following list will appear.

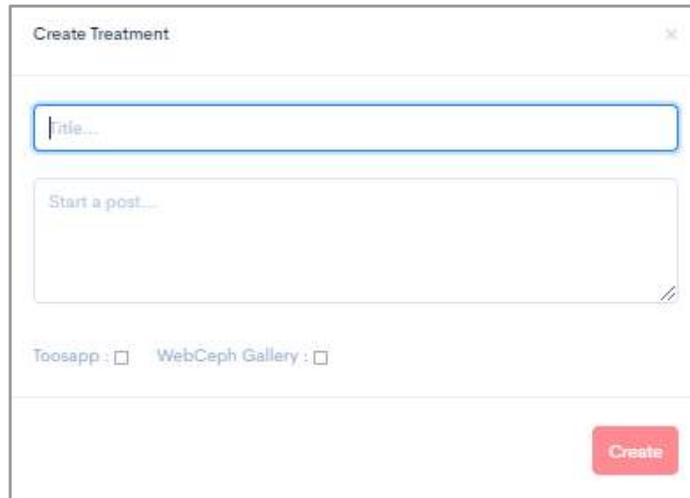


If you click on the  icon on the list, the following pop-up will be displayed.



The before-and-after comparison results can be saved in two ways. The option is to save it in the general storage or the storage in the case room.

When you click on the  icon, the following pop-up is formed and you can save the before-and-after comparison photos in the case room.



When the **Save** icon is clicked, it will be saved to the local PC in jpg. form. The photos will be saved on the previous location saved. The photos below are the actual saved photos.



When the **Animate** icon is clicked, an animation video comparing the before and after is transmitted into section 4.

When you click on the **Superimpose** icon, the before and after treatment lateral face photos are superimposed in 4 sections like the photo below.



All treatments can be reset via the  **Reset** icon. A warning message like the one below is displayed and asks if you want to run it.



When you click on the  **Save Treatment** icon, a pop-up appears where you need to enter the name of the treatment plan, which will be saved on the server.



When the treatment results are saved as above, they are saved in the list as shown below.

Treatment List

OPTION#	TREATMENT PLAN	DELETE
1	Sample	

When you click on the saved list,



, and



icons are activated.

When you click on the



icon, it will be saved to your

local PC in the form of an excel file. The file will be saved based on your previously saved location. The photos below are the actual saved photos.

Item	Movement X	Movement Y
1. Kim, Albertwebeceph-sample-001	0.00 mm	0.00 mm
2. Lincristine		
3. U1 Icp	-2.21 mm	-0.86 mm
4. U1 root	-2.21 mm	-0.86 mm
5. L1 Icp	-1.27 mm	-0.54 mm
6. L1 root	1.14 mm	0.00 mm
7. U6 mesial	0.00 mm	0.00 mm
8. U6 mesial	0.00 mm	0.00 mm
9. A point	0.00 mm	0.00 mm
10. R point	0.00 mm	0.00 mm
11. ANS	0.00 mm	0.00 mm
12. Pog	0.00 mm	0.00 mm
13. Upper Icp	-1.45 mm	0.00 mm
14. Lower Icp	-1.39 mm	-0.54 mm
15. SoftTissue A	-0.06 mm	-0.10 mm
16. SoftTissue B	-0.21 mm	-0.14 mm
17. SoftTissue Pog	-0.04 mm	-0.03 mm
18. SoftTissue Me	0.00 mm	0.00 mm

When you click on the



icon, the following pop-up will

appear then you can save the treatment plan to the server.

Create Treatment ✕

Title...

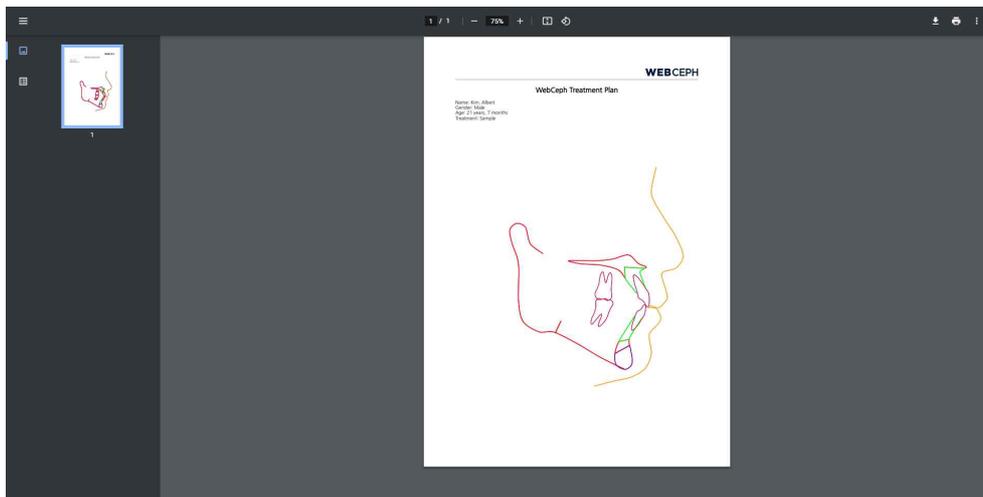
Start a post...

Toosapp :  WebCeph Gallery :

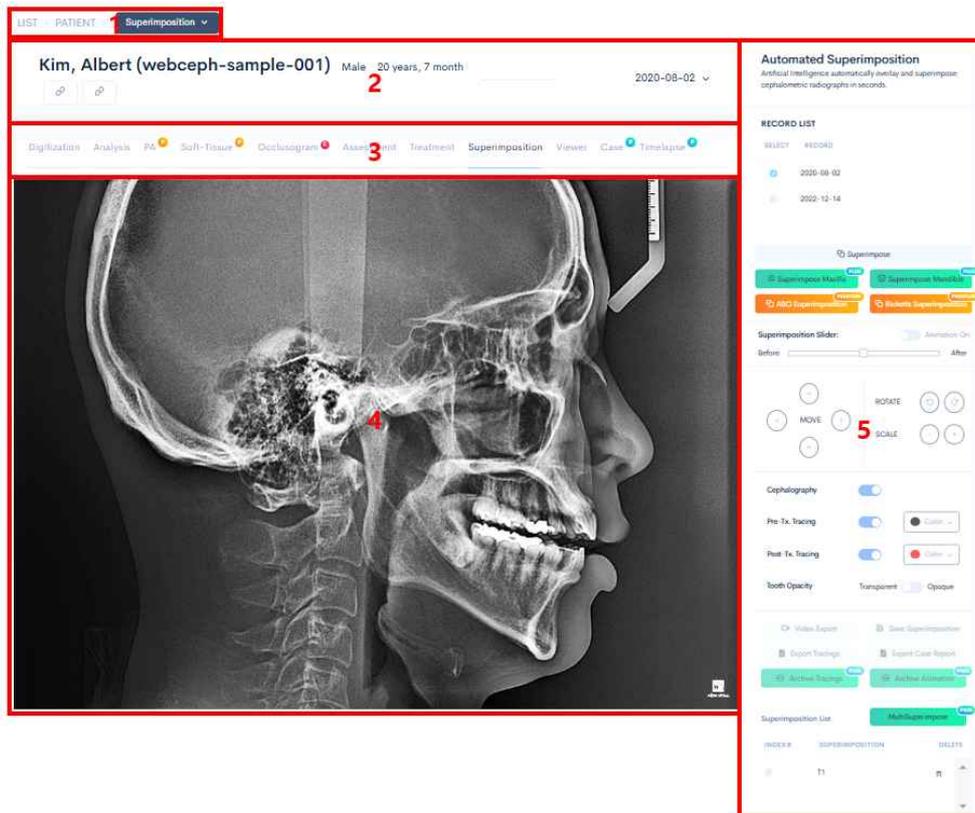
**Create**

Click on the  Export to PDF icon and it will be displayed as a pdf file.

Click on the  icon to save. The picture below is the displayed pdf file.



## 8. Superimposition



- Section 1: Allows you to move to a higher level.
- Section 2: This is the patient information area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: Displays the patient's medical images.
- Section 5: Tools for nesting records are provided.
- Section 6: Shows a list of nested saved.
- Detailed functions by section

tool image	functions	Contents
LIST > PATIENT > RECORD	move to a higher level	move to the desired higher level
Digitization Analysis PA Soft-Tissue Occlusogram Assessment Treatment Superimposition	move between tabs	move to the desired tab
2020-06-07	move records	Change which record is displayed

### 1) Auto Cephalo Image Overlay

WebCeph automatically superimposes cephalo-radiation images in seconds by

the use of artificial intelligence. Nesting is largely divided into lateral cephalos and profiles. You must have at least 2 records for nesting.

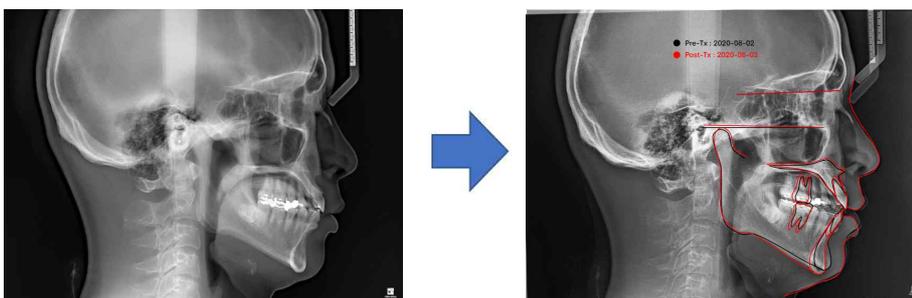
## 2) Record list

A list of records held for that patient is displayed. You must select at least two records for nesting. Select two or more records and click the

 Superimpose

icon to nest them. The photo

below is the superimposed result.



When the

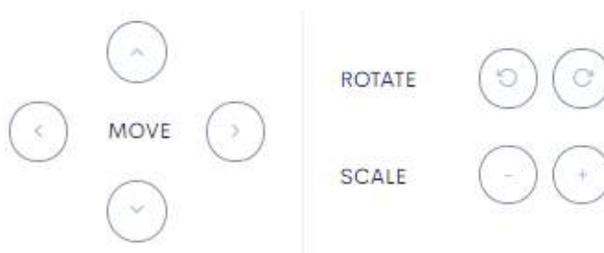
 Superimpose Maxilla

and

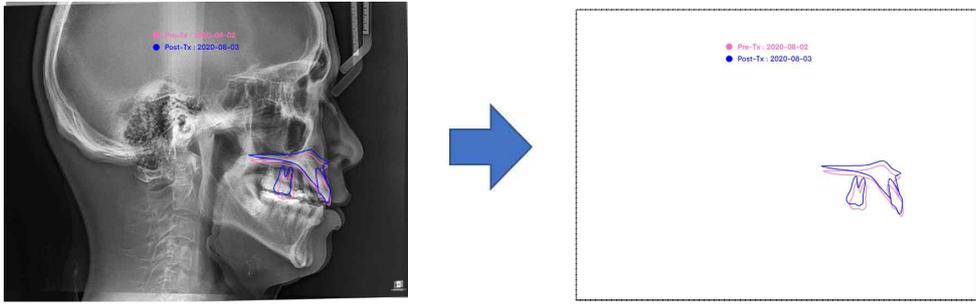
 Superimpose Mandible

icons are pressed, the tracing lines overlapping only the maxilla and mandible, respectively, are displayed.

- ◆ In case of minor errors, click on the button below to operate.



Clinical photos (cephalo X-rays), pre-treatment tracing, and post-treatment tracing can be turned on/off through the toggle key. Except for clinical photos (cephalo X-rays), tracings of the before and after treatment can be easily presented by changing the color of the tracing for analysis. Available in 11 colors.



This is the result when the clinical picture (cephalo X-ray) is turned off through the toggle key.

### 3) Superimposition Slider

You can compare the before and after through the



tool. The video will be displayed in section 4. You can select whether or not to transmit the video through the **Animation Off** icon and if you toggle it off at the desired point, the animation will end at that point.

The video will be saved on the local PC in the form of a gif through the



icon. The file will be saved based on the previous setting. The photos below are the actual saved photos.



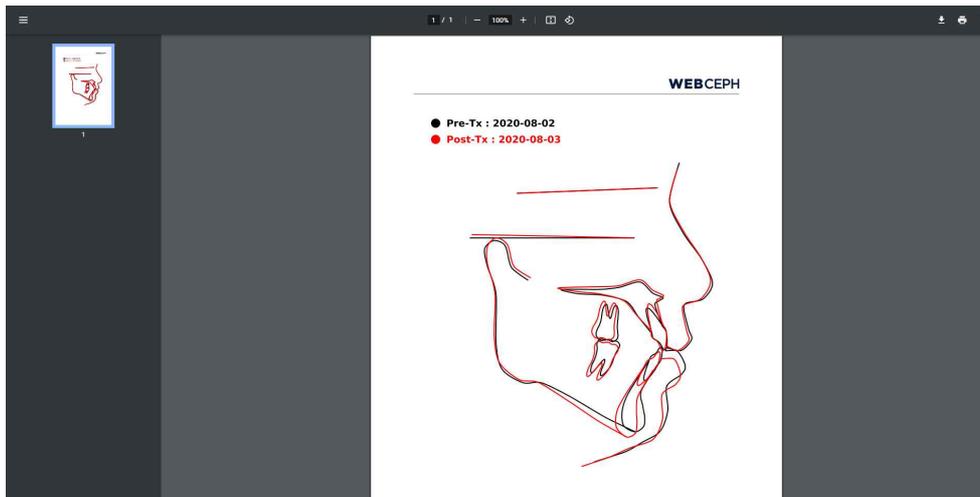
When you click on the  Save Superimposition icon, the following pop-up will be displayed and you can save it to the server.



× Superimposition Name

Cancel OK

Click on the  Export Tracings icon to display the overlaid tracing lines in pdf format.. Click on the  icon to save. The picture below is the displayed pdf file.



Click on the  Export Case Report icon to organize the data you have collected so far.

It is displayed in pdf format and if you want to save it, click on the  icon . The picture below is the displayed pdf file.

**WEBCEPH**

**WebCeph Orthodontic Case Report**

Name: Kim, Albert  
 Gender: Male  
 Age: 21 years, 7 months  
 Recording date: 2020-08-02




PATIENT ID : webceph-sample-001  
 NAME : Kim, Albert  
 GENDER : Male  
 AGE : 21 years, 7 months



**WEBCEPH**

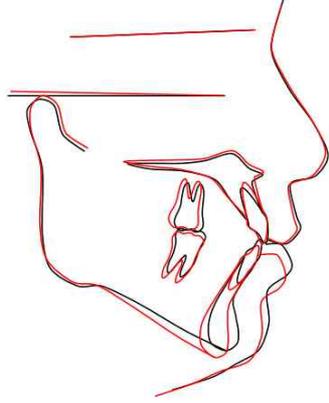



**WEBCEPH**



**WEBCEPH**

● Pre-Tx : 2020-08-02  
 ● Post-Tx : 2020-08-03



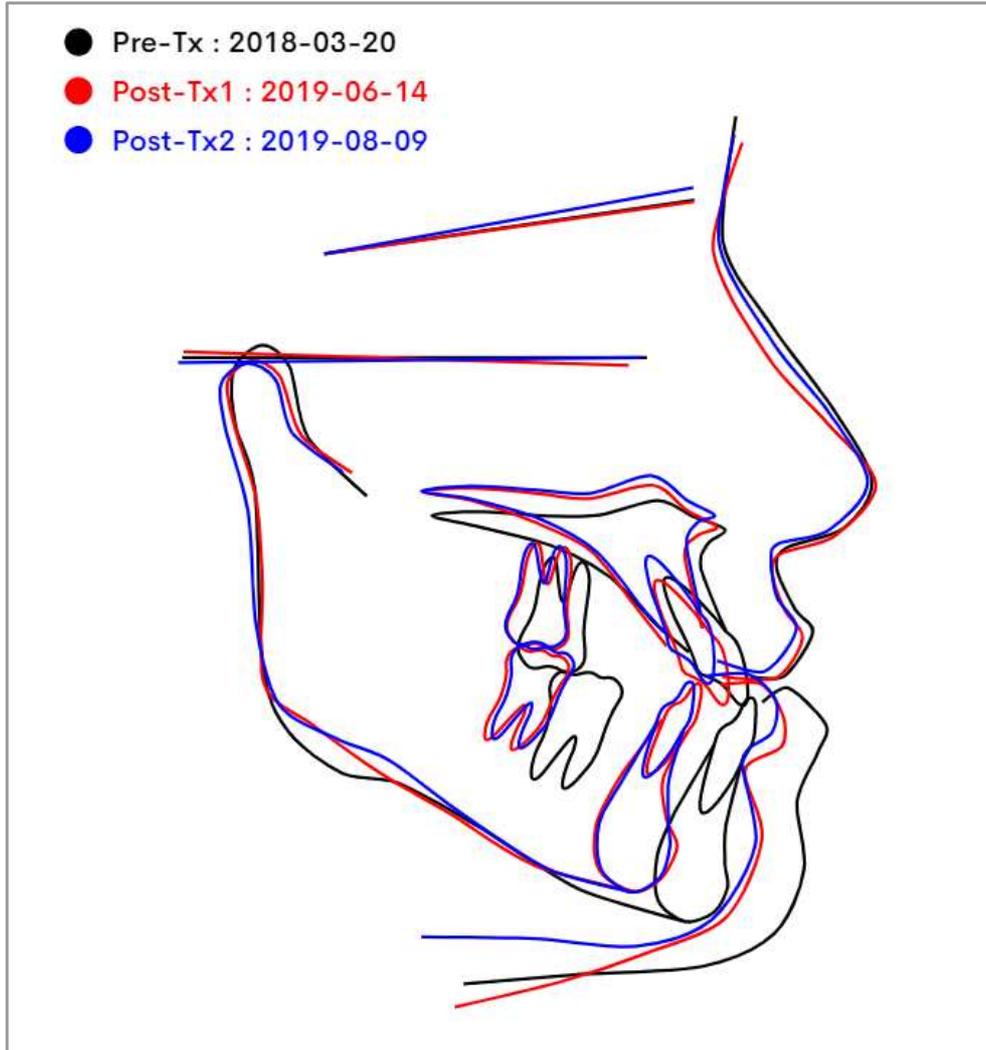
To save the nested tracing lines and animations to the server, click the


 and 
 
 icons to save

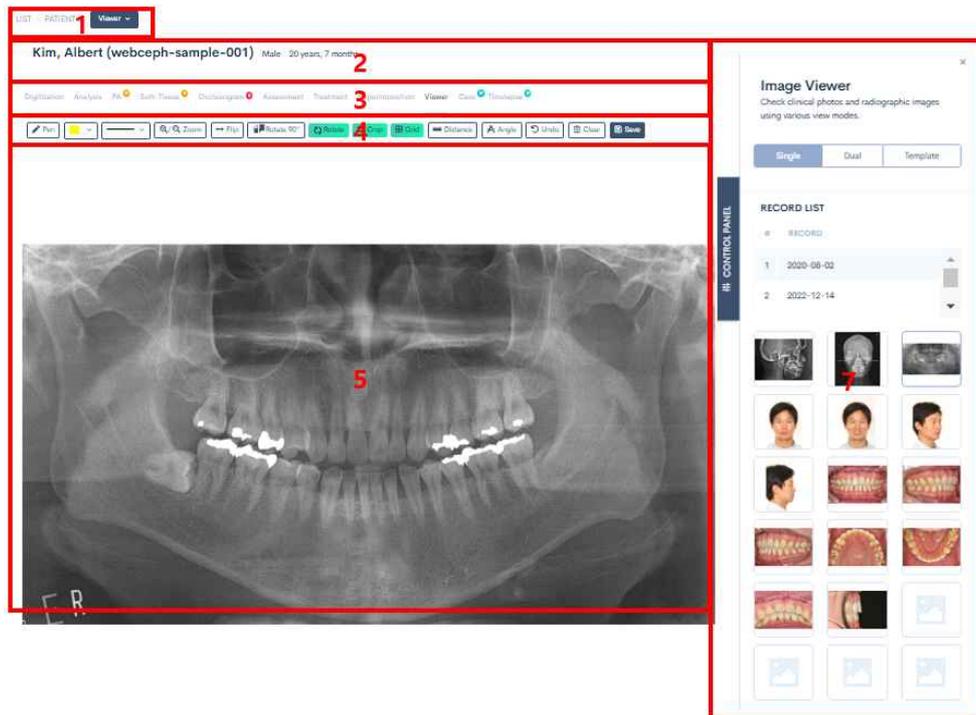
them.

It also provides the ability to overlap the overlapped trace lines with other overlapping data. If you select two or more overlapping results stored in the

overlapping list and then on click the **MultiSuperimpose** PLUS icon, you can proceed with the overlap between the overlapped images once again. The photos below are multi-overlaid photos.



## 9. Viewer



- Section 1: Allows you to move to a higher level.
- Section 2: Patient information provision area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: Various tools are provided to help interpret clinical images.
- Section 5: Displays the patient's medical image.
- Section 6: Displays a list of stored records, and a control panel is provided.

– Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

◆ Section 4

function image	function
	You can use the pen function for clinical images.
	You can change the color of the pen function.
	You can change the thickness of the pen function.
	You can zoom in/out the clinical image with the mouse wheel.
	Clinical images can be rotated 90°.
	The clinical image can be reversed left and right.
	You can use the crop function. After dragging the desired area, save it with the Save button.
	Distance is given in units of base pixels. Draw a line on the 10mm tape measure and click the <b>Set to 10mm</b> on the pop-up window to change in mm unit.
	Measure three arbitrarily chosen angles.
	Cancels the function that has been executed. One by one will be canceled in order of latest.
	Cancel all functions and return to the original clinical image.
	Save functions that worked. However, canvas drawings created with a pen are not saved. Only cropped images, rotated or inverted images are saved.

◆ Section 6



: One clinical image of the patient from Section 5 will be

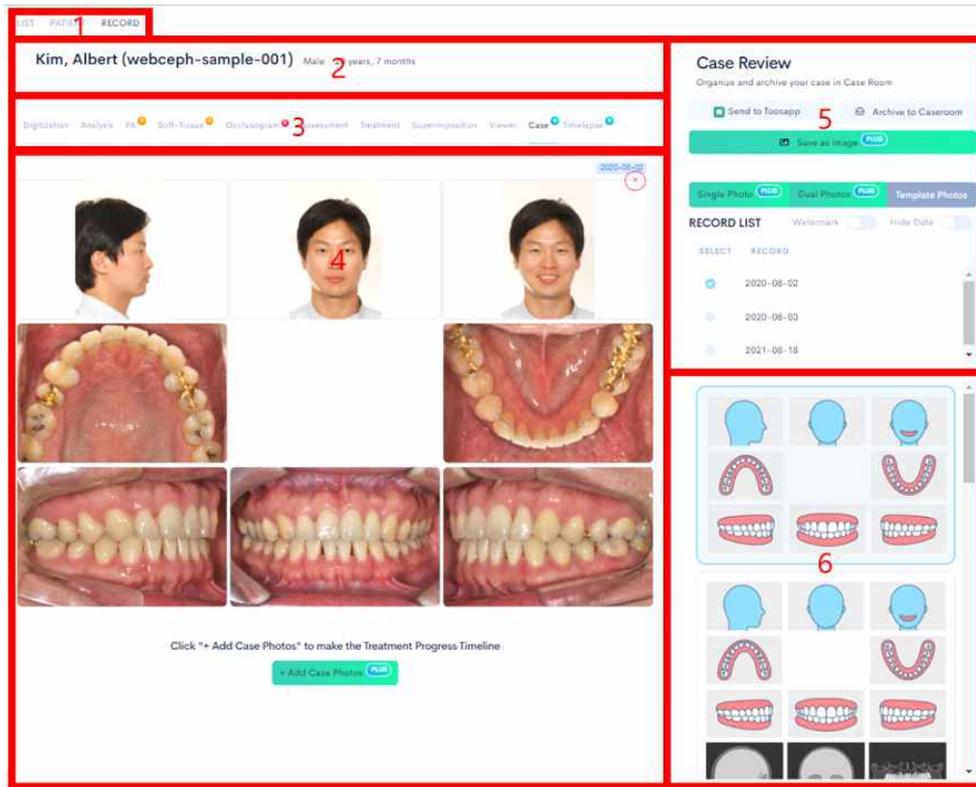
displayed.

 : Section 5 displays two clinical images of the patient. All clinical images saved in the record can be loaded. Each clinical image can be rotated, reversed, enlarged, reduced, and moved.

 : Recalls the records saved in Section 5 and displays them in the form of templates.

Click on the  icon to save in PDF format.

## 10. Case



- Section 1: Allows you to move to a higher level.
- Section 2: Patient information provision area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: Displays the patient's case, and you can also add templates.
- Section 5: Tools to save cases are provided.
- Section 6: Shows a list of saved cases.

– Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

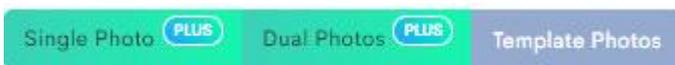
◆ Section 4

The case room at the top displays the desired cases in the saved record. You can also delete it by clicking on the icon in the upper right corner anytime you want.

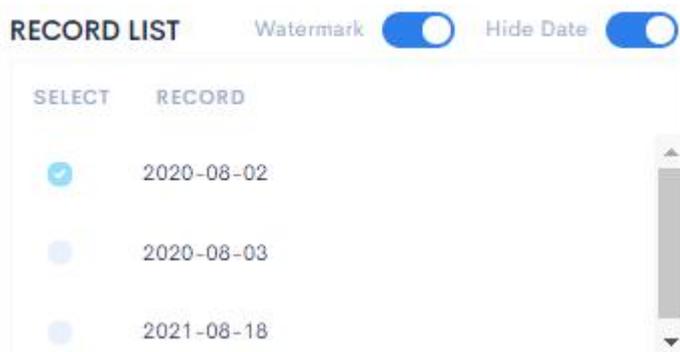
If you click on the icon, an empty case is added as shown below. Click a record from the record (section 6) list on the right to add it.



◆ Section 5

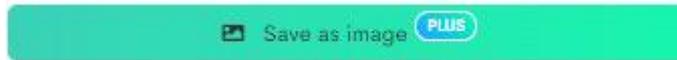


Each button is in the format of the case template being added. One single button, two dual buttons, and a template button where all templates are added.

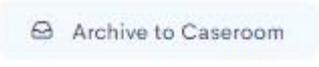


The picture above displays the record list, and you can choose whether to have a watermark and a date stamp or not.

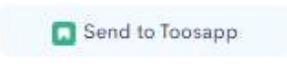
When you click on the



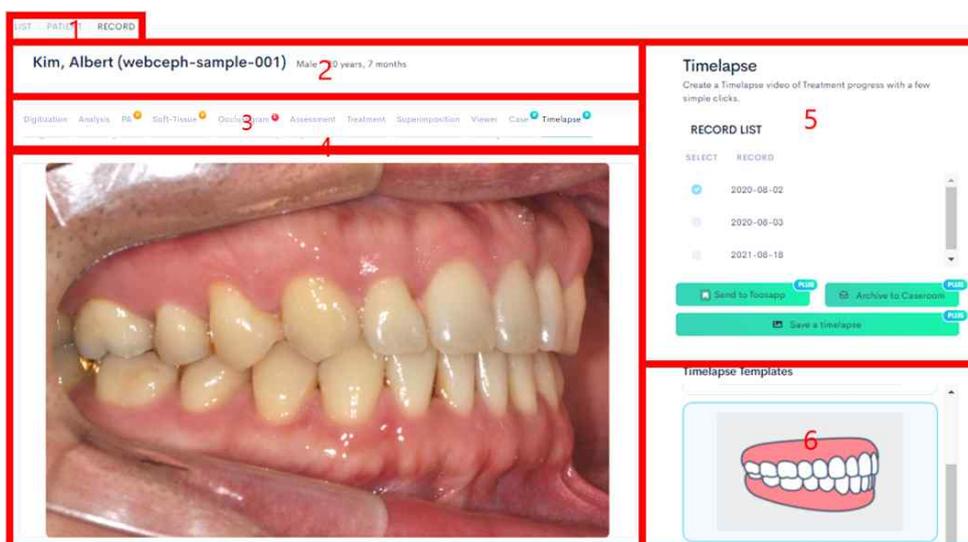
icon, it is saved in the form of JPG on your local PC. The file will be saved based on the previous saving setting.

When you click on the  icon, the following pop-up will be displayed and it will be saved in the Case Room on the WebCeph server.

The image shows a "Create Case" pop-up window. It has a title bar with "Create Case" and a close button (X). The form contains a "Title..." input field, a "Start a post..." text area, a "Tags" input field, and a "WebCeph Gallery" checkbox. A red "Create" button is located at the bottom right.

When you click on the  icon, the same pop-up will appear as when you click on the  icon.

## 11. Timelapse



- Section 1: Allows you to move to a higher level.
- Section 2: Patient information provision area, which displays the name, gender, age, and date of the video.
- Section 3: You can move between functions.
- Section 4: Displays the clinical picture of the patient.
- Section 5: Tools to select records are provided and can be saved.
- Section 6: Displays a list of saved time-lapse templates.

- Detailed functions by section

tool image	functions	Contents
	move to a higher level	move to the desired higher level
	move between tabs	move to the desired tab
	move records	Change which record is displayed

◆ Section 5

After selecting multiple records from the record list, set the desired clinical picture in the time-lapse template in section 6. The image changes over time, and the image will be saved when you click on the

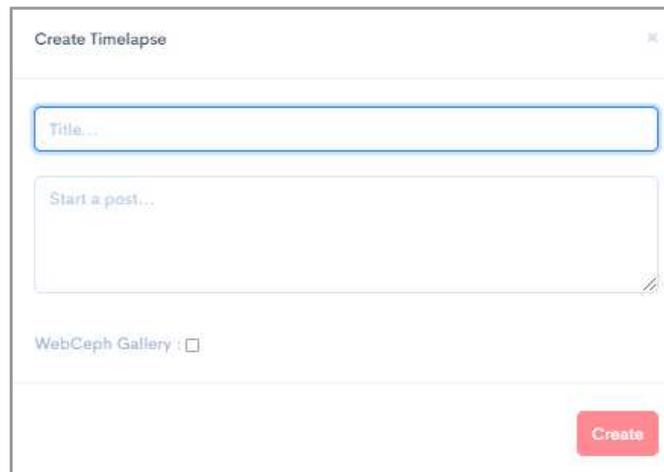


icon. Click on the icon to save. Saved timelapses will be saved on your local PC. The file will be saved based on the previous saving setting.

If you select 2 or more records and click on the



icon, the following pop-up will be displayed, and they will be saved in the Case Room on the WebCeph server.

A screenshot of a "Create Timelapse" pop-up window. The window has a title bar with "Create Timelapse" and a close button (X). Inside, there is a text input field labeled "Title...", a larger text area labeled "Start a post..." with a small icon in the bottom right corner, and a checkbox labeled "WebCeph Gallery : . A red "Create" button is located in the bottom right corner of the form.

## 12. How-to video

<https://www.webceph.com/ko/guide/>

## Chapter 4. Others

1. Specifications
2. Member classification
3. Error types and actions to be taken when they occur
4. Manufacturer Contact
5. Indicated items
6. Re/revision history.

## 1. Specifications

No.	Part name	part control number	Specifications or Characteristics	Lot.	note
1	SoftWare	WebCeph	<ul style="list-style-type: none"> <li>- Model name: WebCeph</li> <li>- Ver. 1.0.5</li> <li>- Development Tool: Sublime Text 3</li> <li>- Application: <ul style="list-style-type: none"> <li>Google Chrome Ver. 84.0.4149.125</li> <li>Mozilla Firefox Ver. 79.0</li> <li>Microsoft Edge Ver. 44.17763.1.0</li> </ul> </li> <li>- HardWare: <ul style="list-style-type: none"> <li>CPU: x64 based processor</li> <li>RAM: More than 8 GB</li> <li>Broadband internet connection and internet connection speed of 1Mbps or higher</li> </ul> </li> </ul>	1	

## 2. Member classification

### A. WEBCEPH FREE

Automated Cephalo Tracing  
Various Cephalometric Analysis  
VTO/STO Simulation  
Automated Superimposition  
Image Gallery  
Case Review and Case Room

### B. WEBCEPH PLUS

Ad- Free  
Automated timelapse video  
Extra Landmarks of Tracing  
Landmark Table  
Maxilla/Mandible/Multiple Superimposition  
Remove Watermark and Print Clinic Logo  
Movement Table of Landmarks of VTO/STO

Profile Superimposition  
Advanced Case Room Feature  
Multiple Analysis Comparison Chart  
Image Crop Feature

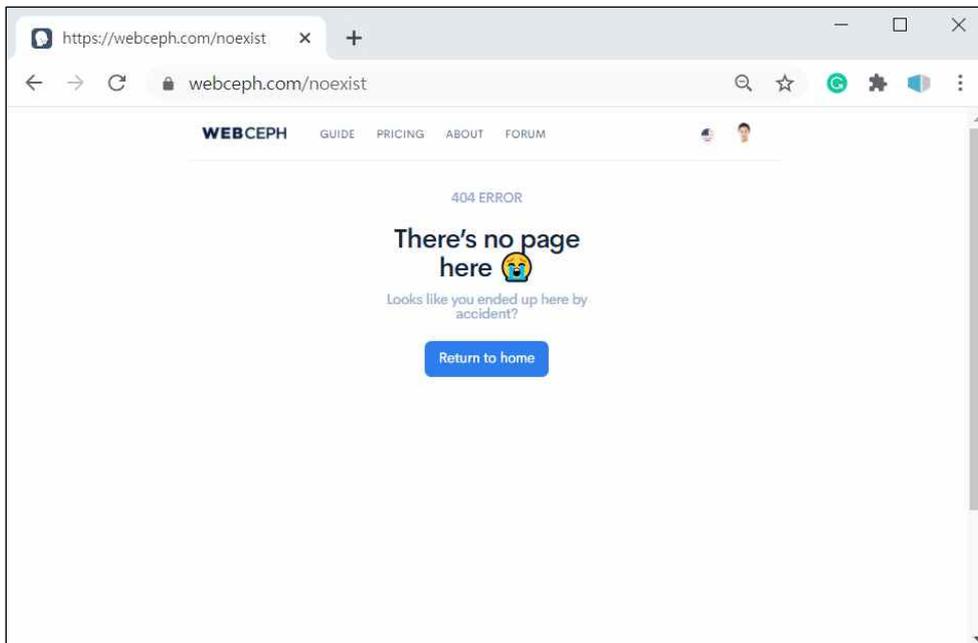
### C. WEBCEPH PREMIUM

A.I. driven Pa Cephalometric Analysis  
A.I. driven Frontal Face Analysis  
A.I. driven Lateral Soft-tissue Analysis  
Ad- Free  
Automated timelapse video  
Extra Landmarks of Tracing  
Landmark Table  
Maxilla/Mandible/Multiple Superimposition  
Remove Watermark and Print Clinic Logo  
Movement Table of Landmarks of VTO/STO  
Profile Superimposition  
Advanced Case Room Feature  
Multiple Analysis Comparison Chart  
Image Crop Feature

## 3. Error types and actions to be taken when they occur

### A. System instability

- a. configuration error
  - Error Cause: Attempting to connect in an environment without a network connection
  - Error screen:

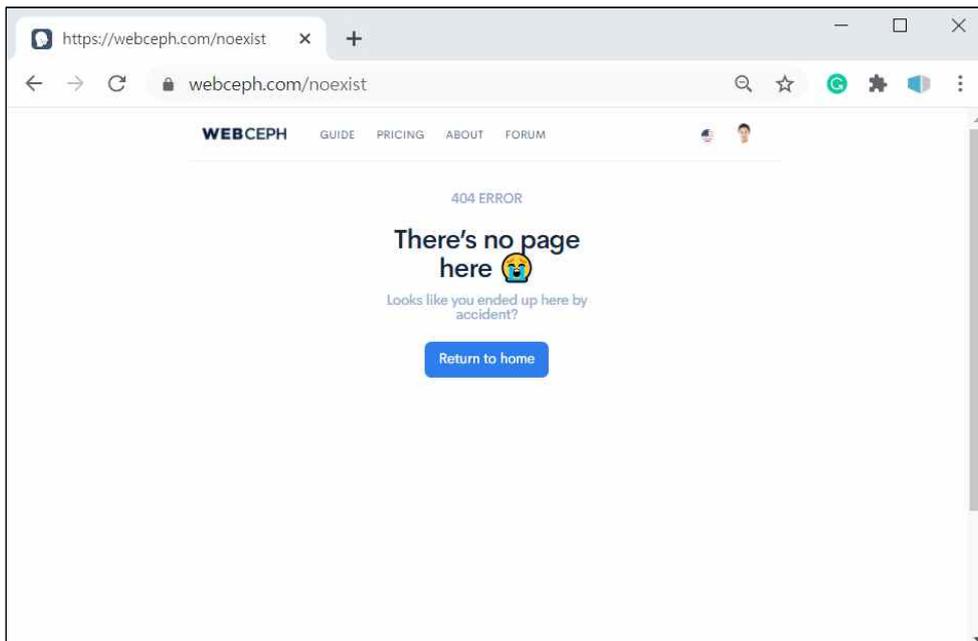


– Action: Check the Internet connection status of the user's computer and try again.

b. network error

– Error Cause: Occurs when a connection request is made to an incorrect sub-address in the WebCeph service

– Error screen:



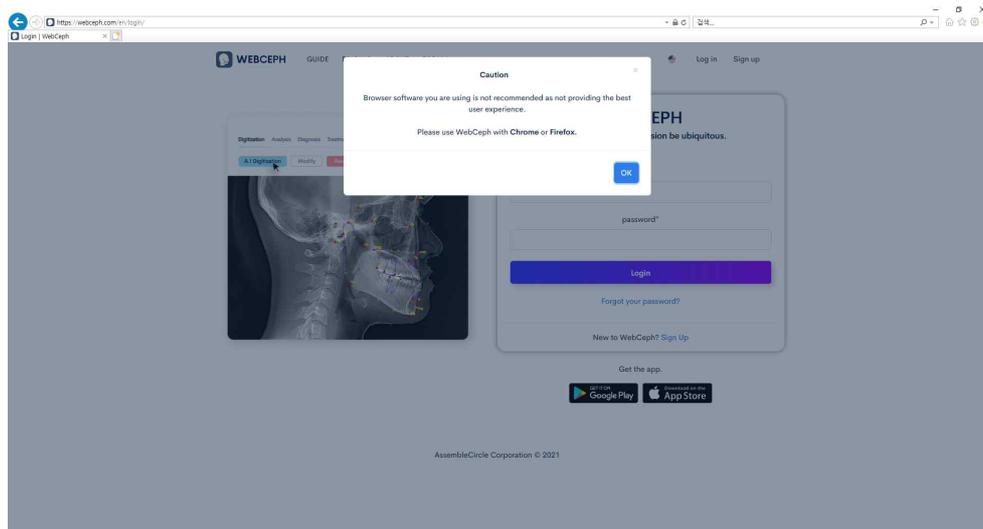
– Action: Return to the main page by pressing the 'Return to Home' or

'Return to home' button.

c. application error

– Error Cause: Occurs when trying to log in page with a browser other than Google Chrome, Mozilla Firefox, or Microsoft Edge

– Error screen:



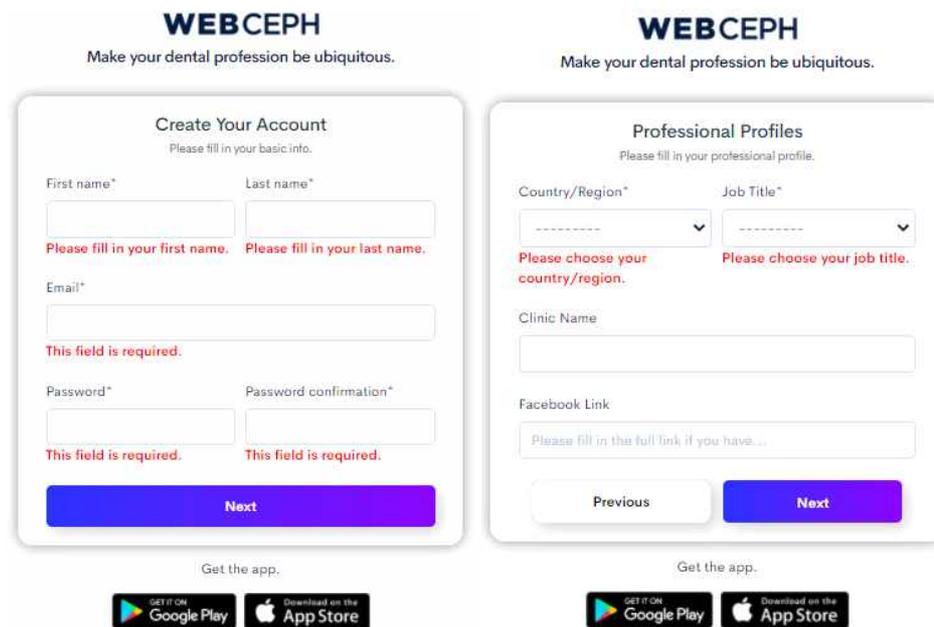
– Action: Access and log in with Google Chrome, Mozilla Firefox, or Microsoft Edge browsers

B. System error (software error)

a. Member registration error 1 (required fields omitted)

– Error Cause: Occurs when you click the Next button without entering the required fields. (first name, last name, email, password, confirm password, country, job type)

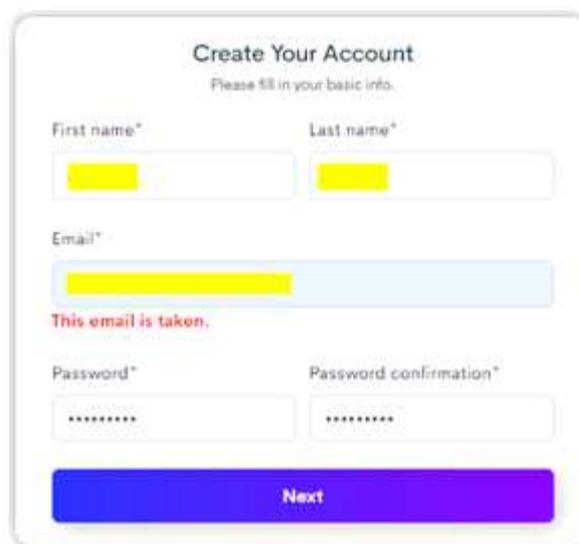
– Error screen:



– Action: Enter all required fields (first name, last name, email, password, password confirmation, country, occupation) and retry membership registration.

b. Member registration error 2 (duplicate email)

- Error Cause: When you try to sign up with a duplicate email address
- Error screen:



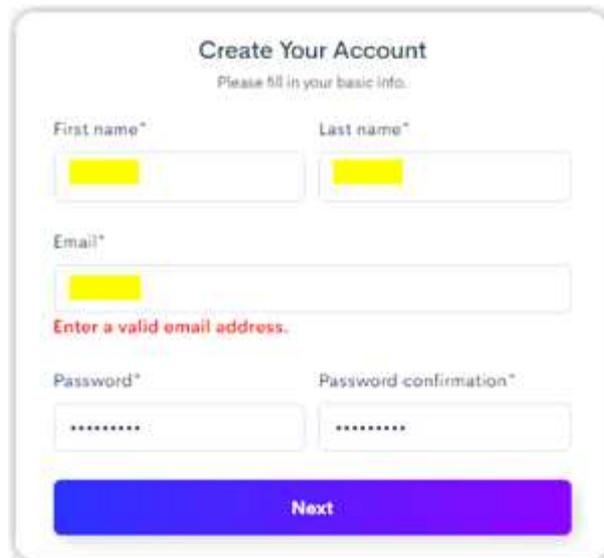
– Action: Retry signing up with a different email address that does not overlap with the existing user

c. Member registration error 3 (not conforming to e-mail format)

- Error Cause: When you try to sign up by entering a string that does not

match the email format in the email field.

– Error screen:



The screenshot shows a 'Create Your Account' form with the following fields and error message:

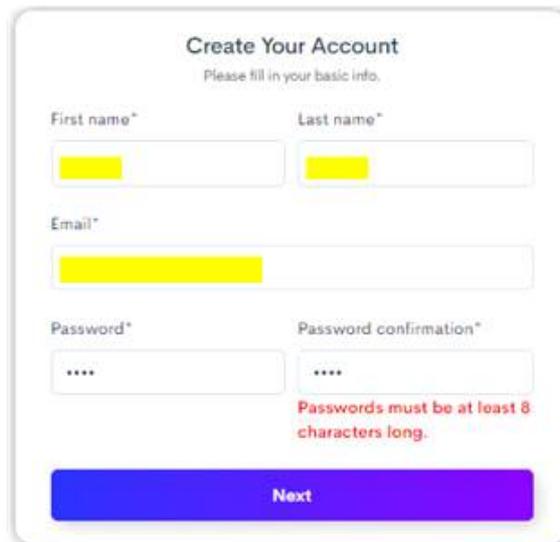
- First name\* (yellow highlight)
- Last name\* (yellow highlight)
- Email\* (yellow highlight)
- Enter a valid email address. (red error message)
- Password\* (masked with dots)
- Password confirmation\* (masked with dots)
- Next button (blue)

– Action: Retry signing up with a valid email address.

d. Member registration error 4. (short password error)

– Error Cause: Occurs when you enter a password of less than 8 characters.

– Error screen:



The screenshot shows a 'Create Your Account' form with the following fields and error message:

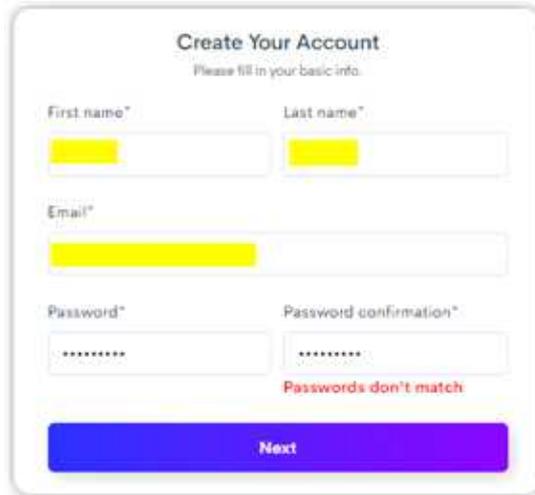
- First name\* (yellow highlight)
- Last name\* (yellow highlight)
- Email\* (yellow highlight)
- Password\* (masked with dots, 4 characters)
- Password confirmation\* (masked with dots, 4 characters)
- Passwords must be at least 8 characters long. (red error message)
- Next button (blue)

– Action: Retry membership registration by entering a password of 8 characters or more.

d. Member registration error 5. (Inconsistent password confirmation)

- Cause of error: When the password and the password entered in the Confirm Password field do not match.

- Error screen:



The screenshot shows a 'Create Your Account' form with the following fields: 'First name\*', 'Last name\*', 'Email\*', 'Password\*', and 'Password confirmation\*'. The 'Password' and 'Password confirmation' fields contain asterisks. A red error message 'Passwords don't match' is displayed below the confirmation field. A blue 'Next' button is at the bottom.

- Action: Retry sign-up by entering the same password in the password and password confirmation fields.

e. login error

- Error Cause: When trying to log in with an email that has not been previously registered or an email that has not been authenticated

- Error screen:



The screenshot shows a 'WEBCEPH' login form with the following elements: a red error banner 'Invalid credentials', an 'Email\*' field with a red error message 'Enter a valid email address.', a 'password\*' field, a blue 'Login' button, a 'Forgot your password?' link, and a 'New to WebCeph? Sign Up' link at the bottom.

- Action: Retry logging in by entering the email and password that were previously registered correctly. If e-mail ownership has not been verified, check the e-mail box entered during registration and retry login after completing e-mail ownership verification process

f. Automatic logout

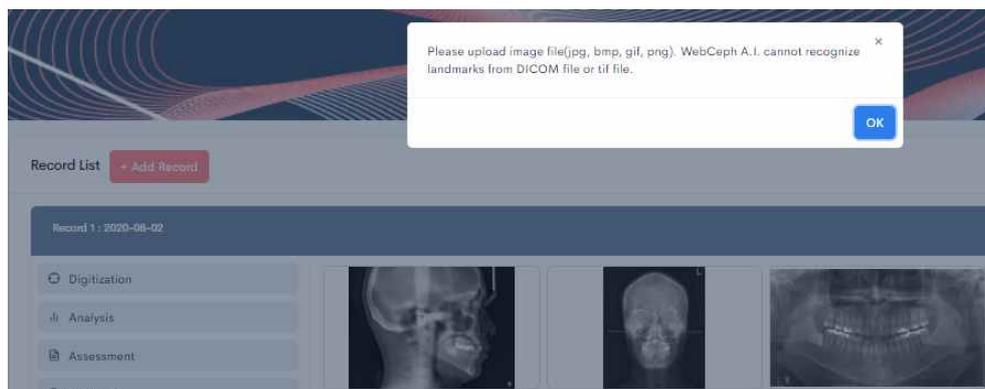
- Cause of error: Occurs when moving to the patient list page after 3 hours at the first login
- Error screen:



- Action: Re-login

g. Image upload error

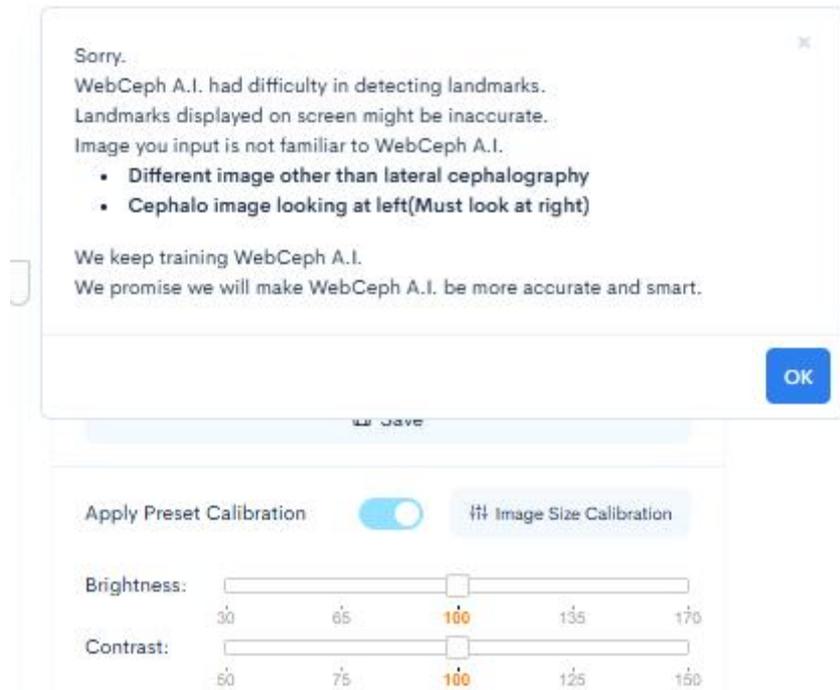
- Error Cause: Occurs when uploading a file in a format other than the supported image file format (JPG, BMP, PNG)
- Error screen:



- Action: Try re-uploading in a supported image file format (JPG, BMP, PNG)

h. Measurement error

- Error Cause: Occurs when an automatic measurement is attempted by uploading an image that is not a side-to-side radiograph
- Error screen:



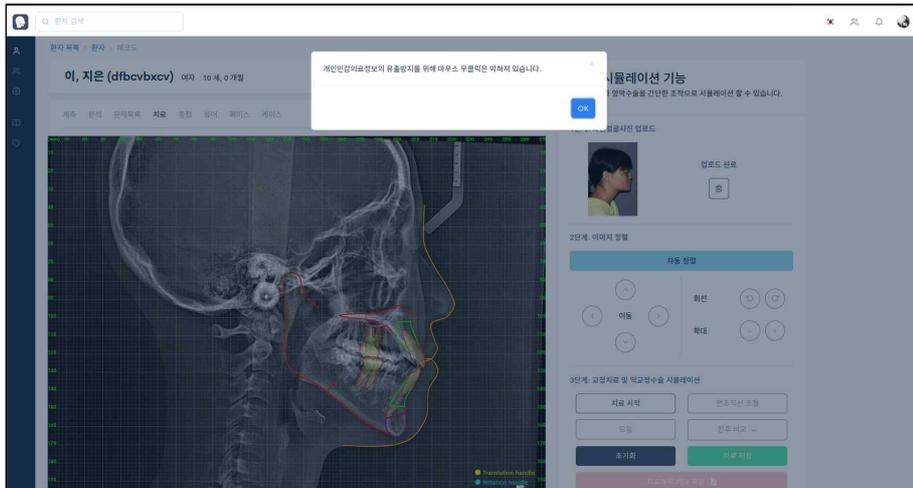
- Action: Retry measurement by uploading a right-sided radiograph.

i. Error preventing right click of mouse

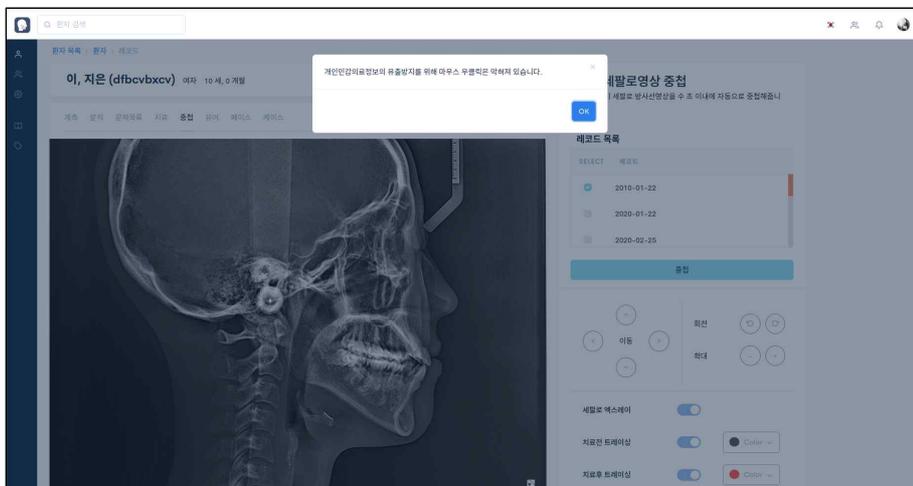
- Cause of error: Occurs when right-clicking the mouse on the page displaying the patient's sensitive medical image (Patient detail page, Measurement tab, Analysis tab, Treatment tab, Overlay tab)
- Error screen:



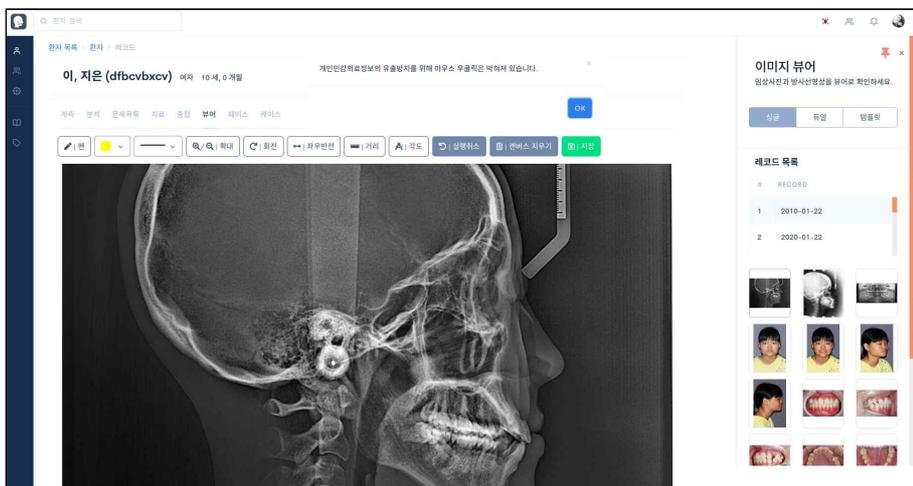
[Treatment tab right-click prevention pop-up]



[Superimposition tab right-click prevention popup]



[Viewer tab right-click prevention popup]

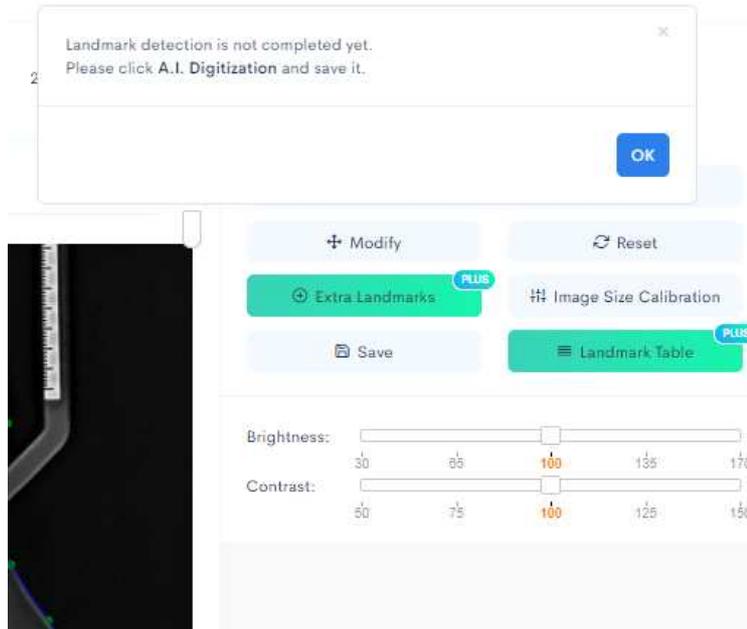


- Action: Click the OK button to close the notification window.

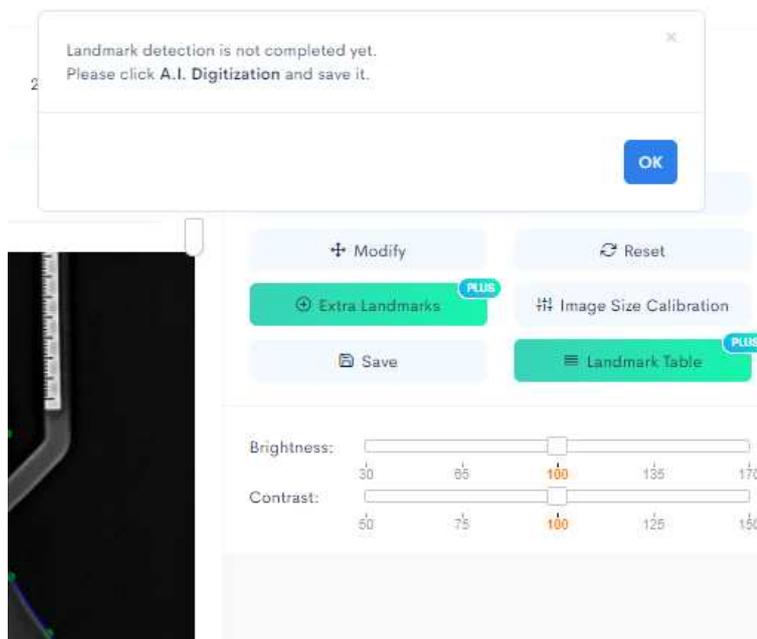
j. Digitization incomplete Tab-to-tab error

- Cause of error: Occurs when an attempt is made to move to the Analysis tab or Treatment tab while the anatomical landmark detection is not completed
- Error screen:

[Warning popup when entering the Digitization incomplete state analysis tab]



[Warning pop-up when entering the treatment tab in an incomplete Digitization state]



- Action: Move to the 'Measurement tab' by pressing the 'Go to

Measurement' button, and move to another tab after automatically measuring and saving

#### 4. Manufacturer Contact

A. Tel. +8231-697-0433 (Service time : business days 09:00-18:00)

B. E-mail. [admin@assemblecircle.com](mailto:admin@assemblecircle.com)

C. Address. 411ho, Samhwan Hipex Building A, 240, Pangyoyeok-ro, Sampyeong-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea

#### 5. Indicated items

##### A. Software GUI notes

manufacturer Name/Address	Assemblecircle 411ho, Samhwan Hipex Building A, 240, Pangyoyeok-ro, Sampyeong-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea
permit number	Write after permission
Product name (grade)	Medical image analysis device software (Level 2)
Model (model name)	WEBCEPH
packaging unit	Standalone software
Serial number (version)	Ver. 1.0.5
Date of manufacture (date of distribution)	2020.10.11
Performance and usage	See user manual
Precautions for use	See user manual
purpose of use	See user manual
※ This product is a medical device.	

## 6. Limitation of the Test Data and Performance of AI algorithm

A total of 2,510 retrospective, de-identified datasets were utilized in this study, consisting of both internationally recognized public benchmark datasets and clinical datasets collected from multiple institutions over several years. The clinical data included cephalometric radiographs of patients ranging in age from 7 to 43 years and represented diverse demographic and clinical characteristics, reflecting a multinational and multiracial patient population.

**Table.** Demographic Characteristics (combined multi-institutional dataset, n=2,110)

Parameter	Subject count (Percentage)
Gender	
Male	1,034 (49.0%)
Female	1,076 (51.0%)
Age	
7–10	317 (15.0%)
11–20	696 (33.0%)
21–30	675 (32.0%)
31–40	380 (18.0%)
41–43	42 (2.0%)
Classification	
Class I	1,076 (51.0%)
Class II	739 (35.0%)
Class III	295 (14.0%)
Orthodontic / Orthognathic Surgery	
Orthodontic	1,625 (77.0%)
Orthognathic surgery	485 (23.0%)

\* The demographic information for 400 subjects provided by the ISBI 2015 was not provided by the institution.

**Age:** Men and women between the ages of 7 and 43

**Gender:** The male to female ratio was 49% male and 51% female

**Disease condition**

The inclusion criteria covered patients who received treatment for malocclusion, including skeletal Class I, II, and III cases as well as dolichofacial, mesofacial, and brachyfacial types. All data were retrospective in nature and processed in a fully de-identified format.

The training and testing procedures were carried out in accordance with the principles of the Declaration of Helsinki and with oversight from the relevant Institutional Review Board (IRB) approval or exemption procedures. A total of 2,210 subjects were randomly assigned to the learning set, while 300 subjects were held out as an independent test set to ensure data independence. The learning set was further divided into 1,768 subjects for training and 442 subjects for validation, maintaining an 80:20 ratio. A 5-fold cross-validation procedure was applied, and overfitting prevention methods were implemented by selecting the model at the point when validation error was minimized. The final model was then evaluated on the independent test set to confirm its appropriateness and effectiveness, and the best-performing model was selected.

## 7. Re/revision history

Re/revision No.	Re/revision page	Re/revision date	Re/revision history
1.0.0	–	2020.10.20	Ministry of Food and Drug Safety Announcement 『Medical Device Manufacturing and Quality Control Standards』 , enacted to fit the company's site to introduce a quality management system
1.0.3		2025.12.02	Revision in accordance with supplementary requirements from the review under the Ministry of Food and Drug Safety's notification on 'Standards for Medical Device Manufacturing and Quality Management,' including modifications to the product processing procedure (such as removal of incoming inspection and replacement with final inspection
1.0.5		2026.02.27	Revision due to product improvements