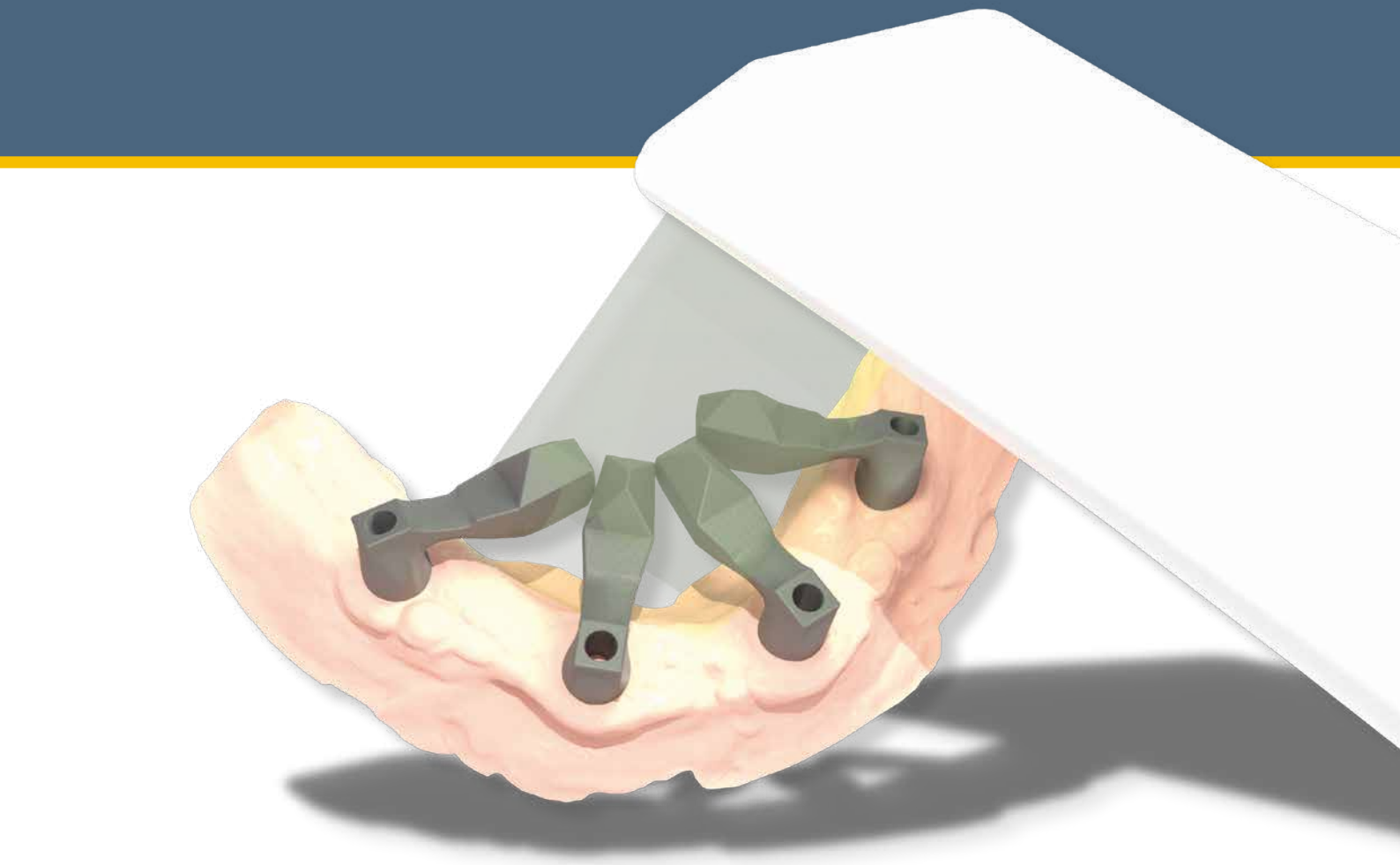
scan LogiQ

Catch the First Experience Dossier



Full Arch Digital Protocol

GROW UP

MISSION

At Grow Up, the development of protocols for the fabrication of full-arch implant-supported prostheses using a fully digital workflow began in 2021. Through various stages of development, these protocols have evolved into solutions highly appreciated by both clinicians and dental technicians, occasionally integrating necessary analog steps to optimize clinical and laboratory outcomes.

The educational activities conducted at Grow Up on this specific topic have been particularly well received, as they provided practical guidance and valuable tips and tricks on how clinicians and dental technicians can optimize the use of their intraoral scanners and CAD software within a full digital workflow.

A significant turning point occurred in early 2025, when New Ancorvis and Life Dental decided to develop the Scan LogiQ System with the aim of further enhancing the performance of the digital workflow. The system was specifically designed to neutralize potential sources of distortion and interference during the data acquisition phase, which could otherwise negatively affect the accuracy and fit of the final implant-supported restorations.

Grow Up played a key role in the validation of the system, initially through fundamental in vitro studies (which will be the subject of upcoming scientific publications) and subsequently through a series of clinical case series. The objectives were to confirm the promising results previously observed in the extraoral environment, refine specific workflow steps, and optimize the integration of the Scan LogiQ System into clinical protocols. Particular attention was given to defining step-by-step data acquisition procedures for the different clinical situations that clinicians may encounter in daily practice, not only to improve prosthetic passivity, but also to support the overall predictability and efficiency of full-arch implant workflows.

We decided to collect a selection of these clinical cases which, in line with the Grow Up philosophy, were performed as Live Experiences thanks to the commitment and valuable expertise of the clinicians and dental technicians involved. A distinctive aspect of these cases is that they represent the very first use of the Scan LogiQ System by all professionals involved. Many of these Live Experiences generated valuable clinical data, provided opportunities for comparison with other digital solutions, and produced a significant amount of educational content. These insights will be shared in future educational events and scientific forums where more in-depth discussion will be possible.

This dossier has been designed to provide a practical and concise overview of each case, presented directly by your colleagues, offering a useful reference for clinicians and dental technicians interested in implementing digital workflows for full-arch implant rehabilitation.

Fabio Ferri
Grow Up Project Leader & Scientific Affair

EXPERIENCE 1

Clinicians:
Dr. Mauro Merli
Dr. Giorgia Mariotti

Dental Laboratory:
Rimini Odontotecnici

The patient presented seeking treatment due to significant functional and aesthetic discomfort, expressing the desire to regain both an effective masticatory function and a confident smile.
From a medical standpoint, the patient had no systemic diseases and was not undergoing any pharmacological therapy. The intraoral examination and diagnostic work-up revealed the presence of inadequate pre-existing prosthetic rehabilitations, chronic apical lesions, soft tissue inflammation, increased periodontal probing depths, and several teeth with a hopeless prognosis.
Considering the patient's aesthetic expectations and treatment-related constraints, a comprehensive rehabilitation plan was established, including extraction of the remaining dentition, regenerative bone surgery, and implant placement through a fully guided surgical approach using stackable guides.

1 Initial clinical images.

The high primary stability achieved at implant placement allowed the delivery of screw-retained provisional restorations according to an immediate loading protocol.
Following the healing phase, a peri-implant plastic surgery procedure was planned to increase soft tissue volume and optimize the peri-implant tissue architecture.
The workflow leading to the fabrication of the definitive screw-retained prostheses included the use of the New Ancorvis "**Scan LogiQ System**".

2 Digital acquisition of the applied "one-shot" scan bodies.

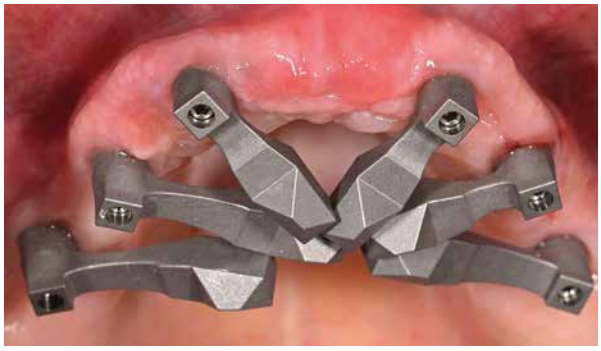
This digital workflow has been specifically designed and validated to reduce distortions during intraoral data acquisition that may negatively affect the accuracy, fit, and passive adaptation of the definitive implant-supported prosthetic restoration.

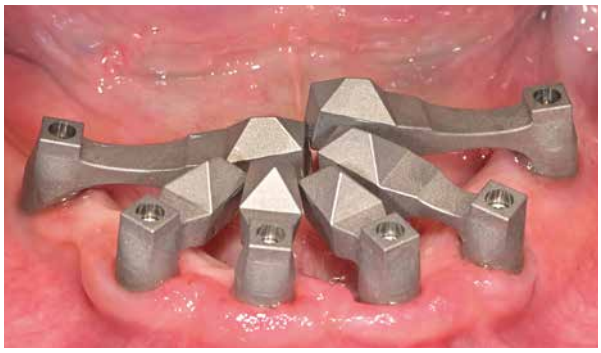
After acquiring the scans of the provisional restorations, the next step consisted of capturing the soft tissue anatomy with the “One Shot” scan bodies connected to the implant-supported multi-unit abutments (MUAs). Their reduced height and tapered geometry enable extremely efficient data acquisition, minimizing the need to repeatedly scan the scan body surface in order to complete the capture.

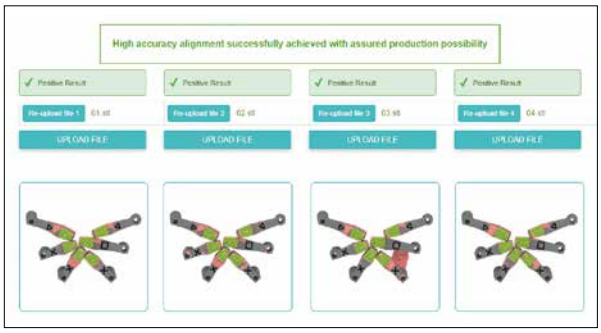
For the mandibular arch, it was necessary to perform an extraoral scan of the provisional restoration with the Reverse IQ components in place. The laboratory then carried out the optimal alignment of the mandibular soft tissue scan with all the other datasets received, using a digital cross-mounting procedure.

A key advantage of the Scan LogiQ System is represented by the IQ Scan Flags, which allow the implant positions to be identified **precisely** through the acquisition of a prismatic reference geometry generated by the convergence of the individual flags toward the centre of the arch. This acquisition procedure must be repeated at least four times to allow Assist LogiQ, the dedicated validation software, to verify the scanner-generated data through a proprietary algorithm and confirm the reliability of the implant position information.

3 IQ Scan Flags applied to the implant-supported MUAs with the prisms converging toward the centre of the arch.
Scan data processing and validation using Assist LogiQ.







4 Mandibular Implant Check with radiographic detail.

5 Maxillary Implant Check with radiographic detail.

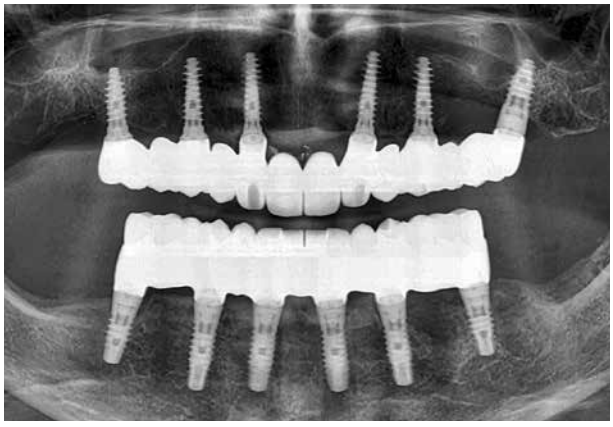
6 Peri-implant soft tissue healing.

The complete dataset was subsequently transferred to Rimini Odontotecnici Laboratory for digital processing and the fabrication of a custom-milled verification jig, referred to as the **Implant Check**. For this case, the framework was milled in titanium (whereas aluminium is routinely used) and featured implant connections directly machined into the structure, allowing a precise evaluation of prosthetic passivity and implant position accuracy. For this patient, the definitive rehabilitation consisted of a screw-retained zirconia prosthesis supported by a titanium structure.

During the try-in and final delivery of the definitive prosthetic restorations, the **Precision Seating Score** was completed. This assessment tool provides clinicians with an additional and valuable method for evaluating the passive fit of the prosthesis and verifying the accuracy of the restorative workflow.

The final clinical images demonstrate the harmonious integration of the prosthetic restorations within the patient's smile and facial aesthetics, as well as the patient's satisfaction with the treatment outcome, having regained both function and confidence in smiling.

7 Final clinical images.



8 Final panoramic radiograph (OPT).

EXPERIENCE 2

Clinician:
Dr. Edoardo Fossati

Dental Laboratory:
Dental 91
di Cristiano Vallero

The patient presented with a fully edentulous maxilla and was wearing a complete removable denture. Her primary expectations were to receive a fixed implant-supported restoration with a highly satisfactory aesthetic outcome.
The proposed treatment plan consisted of the placement of four implants according to the All-on-4 protocol. The implants were initially restored with a screw-retained PMMA provisional prosthesis, followed by a definitive screw-retained zirconia-ceramic restoration. The provisional bridge was delivered the day after surgery and remained in function for four months to allow complete implant osseointegration. The decision to use zirconia for the definitive restoration was driven by the patient's high aesthetic expectations.

1 Initial condition: fully edentulous maxilla.

2 Screw-retained provisional bridge maintained in function for four months.

The definitive full-arch prosthesis consisted of a titanium framework with connections directly screwed onto the multi-unit abutments (MUAs), a high-strength monolithic zirconia bridge adhesively bonded to the framework using a resin-based material, and pink layered ceramic applied to reproduce the gingival tissues and enhance the overall aesthetic result.

3 Placement of the One Shot scan bodies.

4 ScanLogiQ components correctly connected and oriented intraorally prior to digital acquisition.

5 Try-in of the aluminium verification bar (implant check).

6 Try-in of the gingivally waxed prototype.

The digital workflow used for the maxillary impression through the Scan LogiQ System enabled a smooth and efficient data acquisition process. This resulted in a verification bar that seated and screwed into place easily, providing a clear clinical perception of complete passive fit. This was subsequently confirmed radiographically through periapical X-rays taken after tightening a single screw on the implant in the 1.5 position. During the framework try-in appointment, a printed prototype was also evaluated. To enhance the patient's perception of the final aesthetic outcome, the prototype was waxed in the gingival areas. The proposed aesthetic design proved to be fully consistent with the expectations of both the patient and the prosthodontist.

At the delivery of the definitive restoration, the same level of passive fit observed with the verification bar was confirmed. In addition, a slight but appropriate tissue compression was achieved by both the titanium framework in the tissue-contacting areas and the pink ceramic component. Minor occlusal adjustments were required only in the anterior region during dynamic movements, including protrusive and lateral excursions.

The shade of the definitive restoration matched the natural dentition of the opposing arch according to the patient's aesthetic preferences, while the pink ceramic effectively reproduced the colour and appearance of the surrounding gingival tissues, contributing to a harmonious and natural-looking final result.

7 Delivery of the definitive restoration and the patient's final smile.

8 Definitive full-arch bridge in situ.

9 Detail of the integration between the layered ceramic gingiva and the patient's soft tissues.

10 Final periapical radiographs following complete screw-retention of the prosthesis.

EXPERIENCE 3

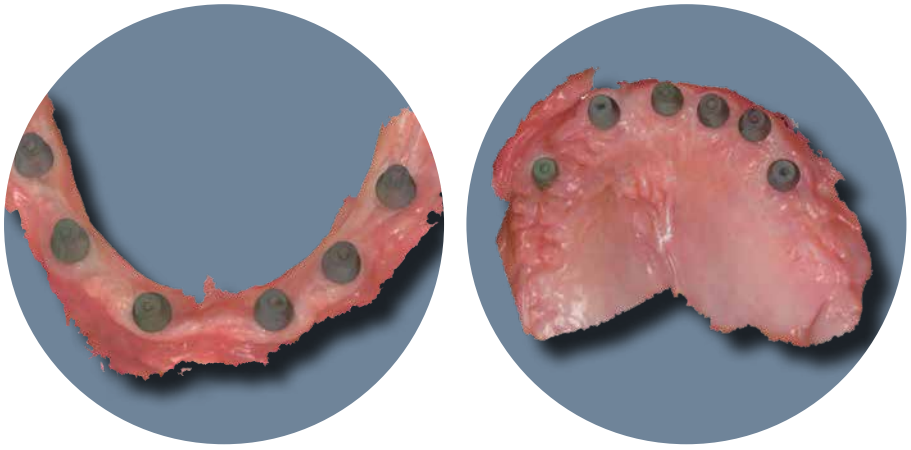
Clinician:
Dr. Stefano Gelli

Dental Laboratory:
Tanio Tomasi
CMSP Odontotecnica

We present the case of a 68-year-old patient (ASA I) who had been wearing complete removable dentures for approximately 10 years and was seeking a fixed implant-supported rehabilitation. A fully guided surgical protocol was planned for both arches, with the placement of six implants in the mandible and seven implants in the maxilla. Due to the poor bone quality and the limited insertion torque achieved during implant placement, an immediate loading protocol was not considered appropriate. Instead, a conventional healing period was allowed to ensure adequate osseointegration before proceeding with the prosthetic phase. This decision was further supported by the fact that the patient did not express an urgent need to receive a fixed restoration immediately after surgery.

1 Complete removable dentures used during the provisional phase.

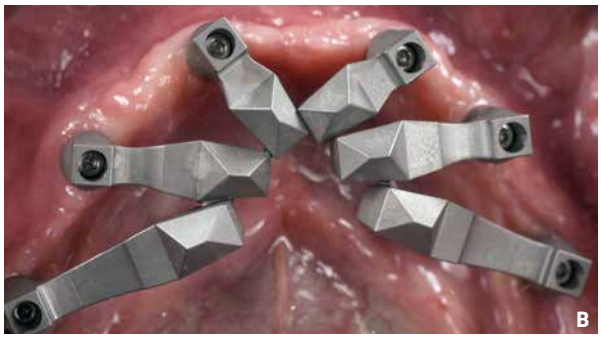
At the time of implant placement, Slim Fit MUAs (New Ancorvis) were connected to the implants and fitted with dedicated healing caps. In full-arch implant rehabilitations, we routinely prefer the use of intermediate abutments, as they have demonstrated biological, mechanical, and clinical advantages over direct implant-level restorative approaches. Two months after surgery, one maxillary implant in position 16 exhibited mobility and was subsequently removed.

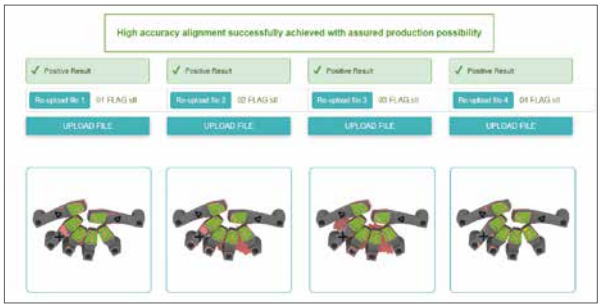


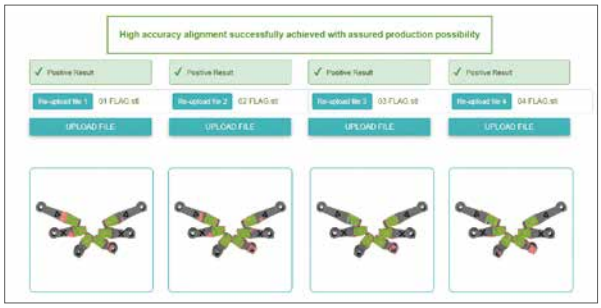
2 One Shot scans: DCM image of both arches.

After completion of the healing period, the prosthetic rehabilitation of both arches was carried out using the Scan LogiQ protocol, following a three-step workflow.

Step 1: During the first appointment, a digital scan of the peri-implant soft tissues was performed for both arches using One Shot IQ scan bodies connected to the Slim Fit MUAs. Subsequently, four separate scans of the IQ Scan Flags were acquired to accurately record the implant positions. The placement of the IQ Scan Flags proved to be straightforward and clinically manageable, facilitating the acquisition procedure.







3 **A. Maxillary IQ Scan Flags:** IQ Scan Flags connected to the maxillary implants.

B. Mandibular IQ Scan Flags: IQ Scan Flags connected to the mandibular implants.

"Small" scan flags were placed on the implants located in the more mesial positions. Moving distally, progressively longer scan flags were selected. Choosing the appropriate scan flag length was straightforward and intuitive.
The most distal implants require a **Large** scan flag. Since these implants may present a vertical offset relative to the more mesial positioned implants, the selection must be made among the three available configurations: **straight Large flags, upward-angled Large flags**, and **downward-angled Large flags**.
The objective is to position the scan flags so that their respective scanning regions are as close to one another as possible. This facilitates the scanning procedure by allowing the scanner to perform short, controlled movements at a consistent height level, thereby minimizing the risk of introducing scanning errors.

4 **Bars:** Detail of the two definitive screw-retained Co-Cr frameworks.

5 **Prototype Try-in:** Printed prototype seated over the definitive frameworks.

During the same appointment, 360° scans of both removable prostheses worn by the patient throughout the healing phase were acquired after relining them with an elastomeric material. This enabled the dental laboratory to perform a digital cross-mounting procedure, correlating the prostheses, soft tissues, and the recorded implant positions.

Step 2: At a subsequent appointment, two metal bars and two 3D-printed prototypes were clinically evaluated. Definitive cobalt-chromium (CoCr) bars were fabricated directly, as the IQ scan flag scans had been analysed and validated by the Assist LogiQ software

Both bars demonstrated complete absence of tilting, no tension during screw tightening, and the Sheffield test confirmed excellent passivity between the framework and the underlying implant connections.

6 **Definitive Restoration:** Detail of the definitive mandibular prosthesis showing the separation between the primary Co-Cr structure and the Double Cross-Linked resin veneering material.

7 **Intraoral Definitive Restoration:** Intraoral view of the definitive implant-supported prostheses.

During the same session, an aesthetic and functional try-in was performed using two printed prototypes seated over the definitive bars. No modifications were deemed necessary, except for shifting the maxillary interincisal midline approximately 2 mm toward the patient's left side. This adjustment was planned to be incorporated directly into the definitive restorations, eliminating the need for an additional verification try-in.

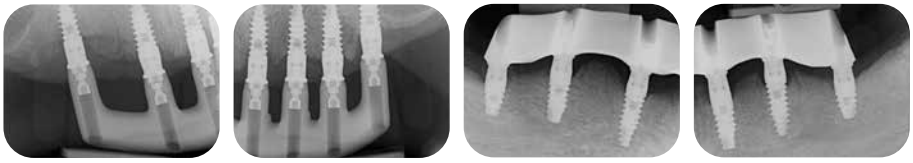
Step 3: At the final appointment, the definitive prostheses were delivered. Each restoration consisted of a previously validated primary bar and a secondary framework fabricated from cross-linked resin (DCL, Ivoclar).

The Scan Logic protocol offers several significant advantages compared with a conventional analog workflow for the fabrication of implant-supported full-arch prostheses:

- **Improved patient comfort:** intraoral scanning is considerably better tolerated by patients than conventional impression procedures.
- **Reduced treatment time:** this bimaxillary rehabilitation was completed in only three clinical appointments (data acquisition, verification, and prosthesis delivery).
- **Simplified replication or modification of an existing provisional restoration:** the digital cross-mounting workflow enables highly accurate and predictable duplication of a provisional prosthesis already worn by the patient, while facilitating any required modifications.

Although our conclusions are based on a limited number of initial clinical cases, the Scan LogiQ protocol has proven to be an accurate, streamlined, and time-efficient workflow. It should be emphasized that successful implementation of the Scan LogiQ technique requires comprehensive training and strict adherence to the prescribed clinical and laboratory protocol. To achieve predictable outcomes, all clinical and technical procedures must be performed meticulously and in accordance with the established workflow.

8 **Extraoral definitive outcome:** Patient's smile with the definitive prosthesis.



9 **Bar frameworks radiographs:** Intraoral radiographs of the definitive frameworks.

EXPERIENCE 4

Clinician:
Dr. Claudio Mariconti

Dental Laboratory:
Diego Corrisio

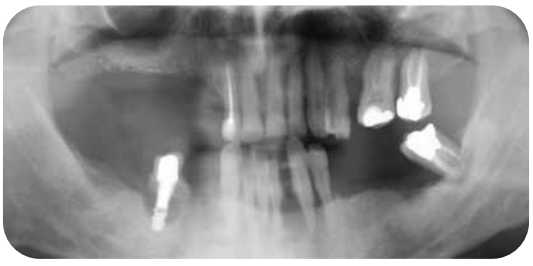
A 63-year-old male patient, Rodolfo, presented to the clinic. His medical history was non-contributory (ASA I), he was a non-smoker, and was not taking any medications. Clinical and radiographic examination revealed a terminal dentition in the mandibular arch, characterized by a limited number of remaining natural teeth exhibiting severe alveolar bone loss and advanced mobility. In the maxillary arch, eight teeth were still present, of which at least six were considered restorable. The patient's primary request was the rehabilitation of both arches with fixed prosthetic restorations whenever feasible.
Following comprehensive data collection and treatment planning, the proposed treatment sequence was as follows:

1. **Initial sanitation phase:** extraction of the mobile mandibular teeth and delivery of a provisional removable partial denture.
2. **Mandibular implant phase:** placement of four implants followed by immediate loading with a screw-retained provisional prosthesis.
3. **Maxillary rehabilitation phase:** restoration of the remaining restorable teeth, implant placement in the first quadrant, and fabrication of a fixed prosthetic rehabilitation extending from tooth 1.6 to tooth 2.6.
4. **Definitive mandibular restoration phase:** replacement of the mandibular screw-retained provisional prosthesis with the definitive restoration.

The following section will focus exclusively on the procedures related to **Phase 2.**
A fully digital workflow based on the **Scan LogiQ System** was selected. To the best of our knowledge, this represents the first application of the Scan LogiQ protocol for the fabrication of an immediately loaded screw-retained prosthesis delivered within four hours of implant placement. Prosthetic rehabilitation was performed using **Straumann SRA 4.6 multi-unit abutments (MUAs)**. After obtaining informed consent, treatment was initiated with the understanding that, should any concerns arise regarding the accuracy or quality of the final restoration, a conventional workflow would be adopted to ensure a predictable clinical outcome. Figures 1 and 2 illustrate the initial clinical situation and the preoperative panoramic radiograph, respectively.

1 Initial situation.

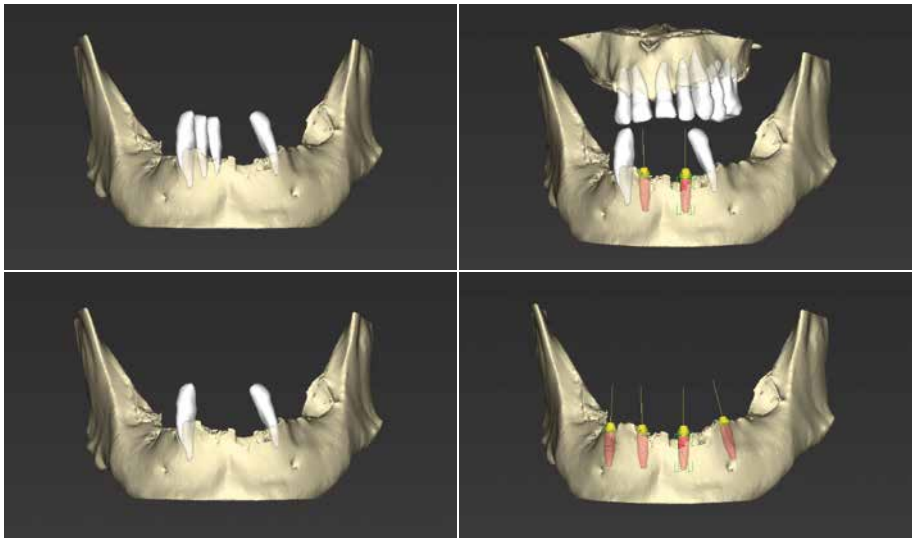
3 Clinical situation following extraction of hopeless teeth and professional oral hygiene therapy.



2 Initial panoramic radiograph.

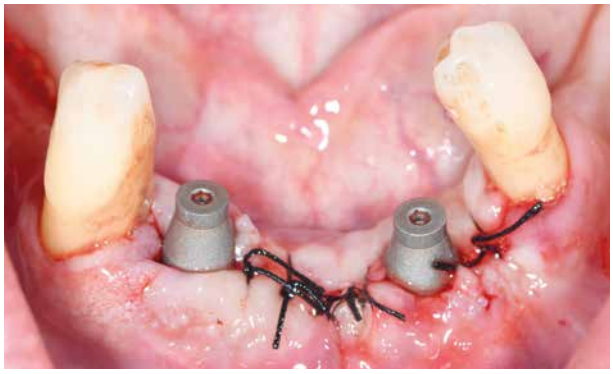
At this stage, implant planning was performed with the intention of placing four implants in positions 4.5, 4.2, 3.2, and 3.5. Particular attention was paid not only to implant positioning but also to the sequence and type of digital scans required to support the workflow for the fabrication of the immediate provisional restoration. The planned surgical sequence was as follows:

1. Extraction of teeth 4.2 and 4.1.
2. Placement of implants in sites 4.2 and 3.2.
3. Placement of implants in sites 4.5 and 3.5.

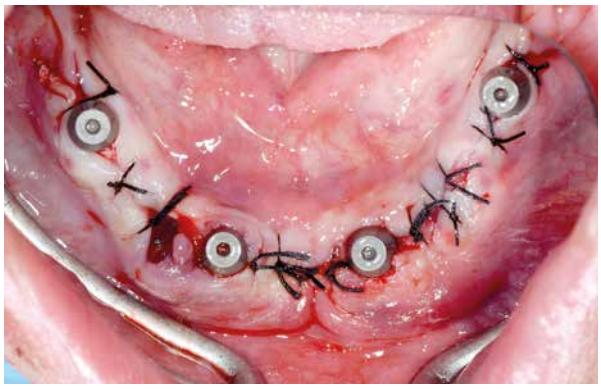


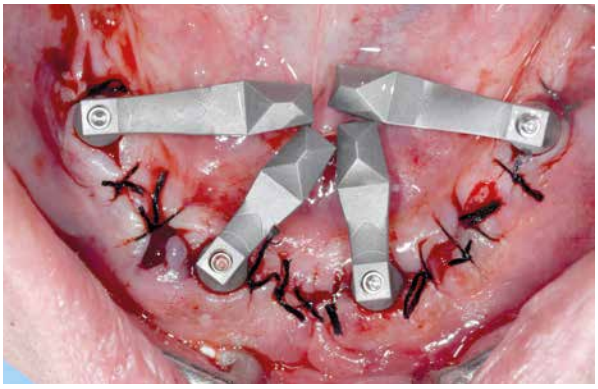
4 Implant planning.

Prior to surgery, intraoral scans of both arches, together with a bite registration in maximum intercuspation, were acquired to generate a **Master Model**. This reference dataset was subsequently used throughout the workflow, ensuring preservation of the original occlusal relationships during all subsequent scanning procedures. The planned extractions were then performed, followed by implant placement in sites 4.2 and 3.2. Simultaneously, a guided bone regeneration (GBR) procedure was carried out to compensate for the alveolar defect in the mandibular incisor region. One Shot IQ scan bodies were subsequently connected to the implants. After duplicating the Master Model scan, the copied mandibular scan was modified to acquire the One Shot IQ scan bodies in positions 4.2 and 3.2. To achieve this, only the scan area corresponding to the extracted teeth and the adjacent soft tissues was selectively trimmed and replaced.
This approach generated a **transitional scan**, enabling accurate alignment between the subsequently recorded implant positions and the post-surgical soft tissue architecture, while preserving the maxillomandibular relationship established during the initial scanning phase.



5 Planned extractions and placement of implants in sites 4.2 and 3.2.





6 Implant Placement in Sites 4.5 and 3.5 and Extraction of the Remaining Teeth.

7 Connection of the Four IQ Scan Flags to the SRA 4.6 Multi-Unit Abutments.

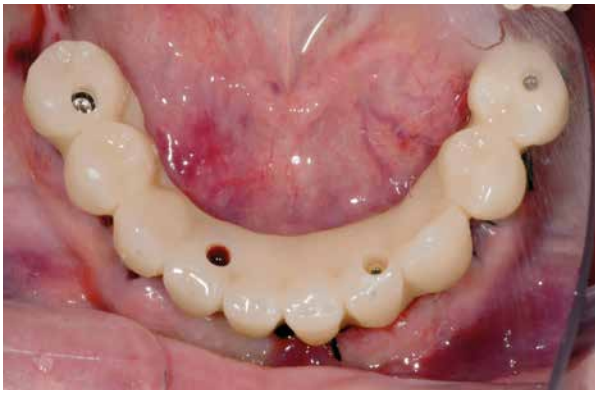
The implants in sites 4.5 and 3.5 were subsequently placed, and the remaining natural teeth were extracted. A postoperative intraoral scan was then acquired with all four One Shot IQ scan bodies in place (Fig. 6).

As a final clinical step, the four IQ scan flags were connected to the SRA 4.6 multi-unit abutments (Fig. 7). Particular care was taken to orient the prismatic scanning regions of the scan flags as far anteriorly as possible and in close proximity to one another. This configuration minimized the overall scanning area, thereby reducing the risk of stitching-related distortions during intraoral scanning.

The IQ scan flags remained elevated above the mucosal tissues and isolated from saliva contamination.

Four additional scans focused exclusively on the scan-flag acquisition regions were then performed. These datasets were subsequently analysed and validated using the dedicated Assist LogiQ software, ensuring the accuracy of the digital records before proceeding with the laboratory phase. All acquired data were transmitted to the dental laboratory of Diego Corrisio (Spino d'Adda, Italy) with the request for a milled PMMA provisional framework incorporating V4-Innova titanium bases (Figs. 8–9). Approximately three hours later, the completed provisional prosthesis was returned by the laboratory.

8 Milled MMA Framework with
9 V4-Innova Ti-Bases.



10 Framework Try-In.

11 Framework Try-In.

12 Radiographic Evaluation.

The framework was tried in and demonstrated excellent passive fit. Verification radiographs and the Sheffield test confirmed the accuracy of the framework fit (Figs. 10-11). Dimensional and occlusal relationships were consistent with the acquired digital scans. In addition, the patient's highly positive feedback regarding both comfort and aesthetics further confirmed the validity of the proposed workflow.
Treatment was therefore continued with the prosthetic rehabilitation of the maxillary arch.

12 Soft Tissue Condition After Healing.

13 Definitive Maxillary Restorations with the Initial Immediately Loaded Mandibular Provisional Prosthesis.

EXPERIENCE 5

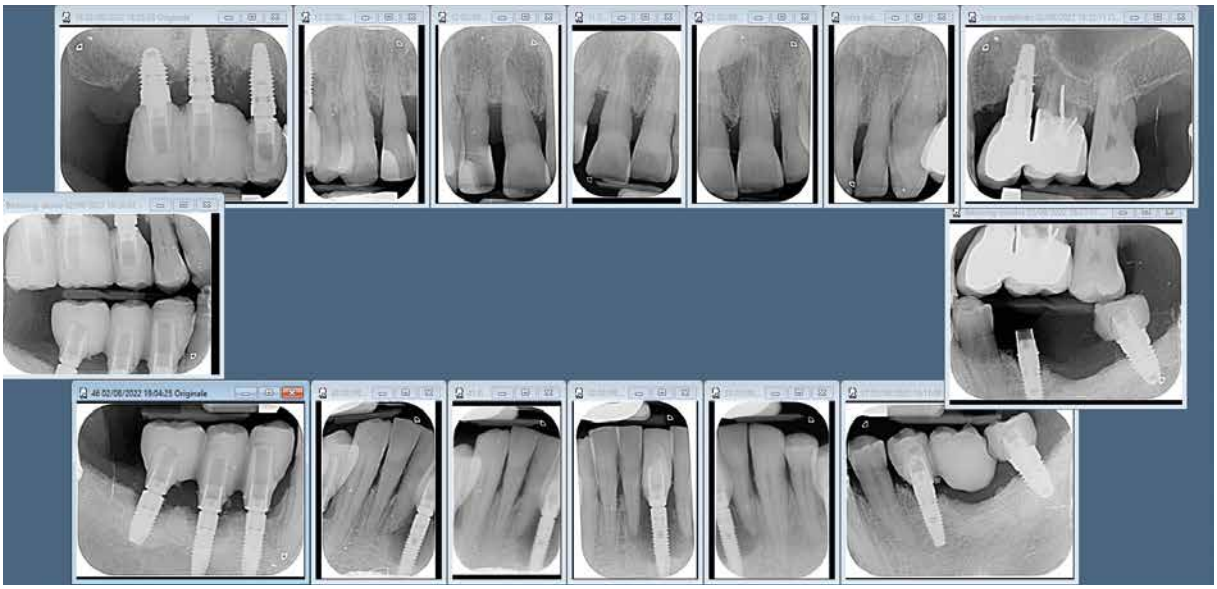
Clinician:
Dr.ssa Ioana Datcu

Dental Laboratory:
Pierfrancesco Golfarelli

Clinical introduction.
The presented clinical case describes a full-arch maxillary rehabilitation on implants, performed through an advanced digital workflow supported by the Scan LogiQ System.
The treatment objective was to achieve a definitive prosthesis characterized by high accuracy, structural passivity, functional stability, and optimal soft-tissue integration, in accordance with the patient's expectations and established biological and prosthetic principles.

Clinical photographic documentation and procedural stages.
1. Initial clinical situation (Fig. 1-2).
The initial condition was characterized by functional and aesthetic impairment of the maxillary arch, with occlusal discrepancies and indication for full-arch implant-prosthetic rehabilitation.

1 Initial frontal smile photograph.



2 Initial radiographic assessment (full diagnostic status).

3 Initial intraoral frontal view in occlusion.

4 Initial intraoral lateral view (left side).

5 Initial intraoral lateral view (right side).

2. Pre-surgical intraoral evaluation (Fig. 3-5).
Clinical intraoral analysis of soft tissues, available prosthetic space, and occlusal relationships, performed as a preliminary step for digital case planning.

3. Pre-operative maxillary occlusal view and post-extractive surgical phase (Fig. 6-7).
Occlusal evaluation of the upper arch used to define implant positioning and the design of the future prosthetic structure. Intraoperative image following extractions and preparation of implant sites, with management of hard and soft tissues aimed at subsequent prosthetic rehabilitation.

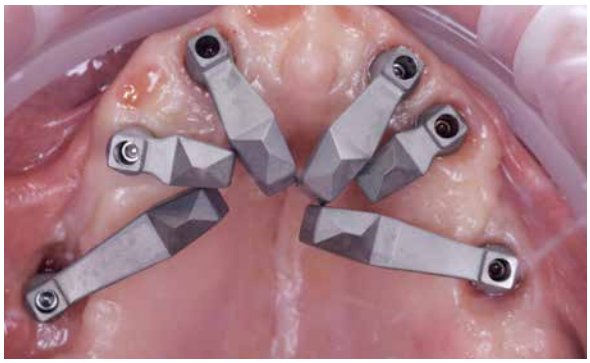
6 Initial upper arch occlusal intraoral view

7 Intraoral occlusal view during surgical phase (extraction sites and provisional management on remaining teeth).

4. Intraoral One Shot Scan Body acquisition (Fig. 8).
Placement of One Shot IQ Scan Bodies for simultaneous digital acquisition of anatomical and prosthetic data, using a simplified scanning strategy that also provides Assist LogiQ software with an initial indication of implant positions.

5. Intraoral Scan Flag IQ positioning (Fig. 9).
Insertion and positioning of Scan Flags according to the concept of scan region centralization. The geometric design of the flags (prism/pyramid structures) enables accurate detection of implant positions and spatial orientation within the digital workflow.

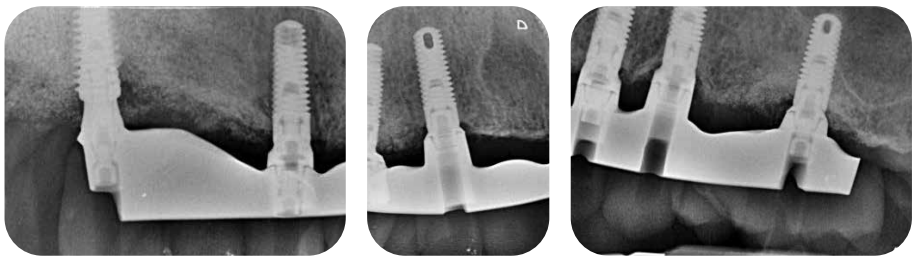
8 One Shot Scan Body intraoral acquisition - frontal view.



9 Scan Flag.

10 Positioning.

11 Final bar radiograph (definitive framework).



This approach allows, through the execution of four rapid scans lasting only a few seconds each, the acquisition of key clinical information which is subsequently verified and processed by dedicated software (Assist LogiQ).

1. Assist LogiQ (Fig. 10).
Result obtained after processing the dataset acquired through the Assist LogiQ system.

2. Definitive titanium bar (Fig. 11).
Definitive framework manufactured in a titanium bar, designed through a fully digital workflow and clinically validated in terms of accuracy and passive fit.
The structure ensures high mechanical rigidity and optimal implant-prosthetic passivity.

3. Definitive zirconia-ceramic prosthesis (Fig. 12).
The final rehabilitation was fabricated using a titanium bar as the primary framework, onto which three monolithic zirconia bridges were subsequently bonded, divided into three distinct prosthetic segments.
This design strategy allowed the combination of the mechanical rigidity and structural precision of titanium with the aesthetic and functional advantages of monolithic zirconia, while also ensuring improved stress distribution control and easier long-term maintenance.
This solution enables the integration of structural rigidity, accurate fit, and high aesthetic-functional **performance, together with correct management of emergence profiles.**

12 Final photographs of the definitive restoration.

13 Definitive zirconia-ceramic prosthesis.

4. Final clinical outcome (Fig. 13-15).
Final intraoral and extraoral views of the full-arch rehabilitation, demonstrating harmonious soft-tissue integration, stable occlusion, and high aesthetic and functional satisfaction.

Clinical evaluation and conclusions.
The data acquisition phase using the Scan LogiQ system proved to be particularly simple and time-efficient, without the need for complex scanning strategies or predefined acquisition sequences.
This resulted in reduced scanning times and improved clinical workflow comfort, enhancing data quality already from the initial acquisition phase.
The absence of constraints related to specific scanning patterns made the procedure more repeatable and less operator-dependent, reducing the risk of cumulative errors typically associated with multi-implant intraoral scanning procedures.
The acquired dataset proved to be stable and reliable, facilitating a smooth transition to the CAD phase and subsequent fabrication of the final prosthetic structure.

14 Definitive prosthesis.

15 Final intraoral frontal view (clinical outcome).

The verification of the accuracy and passive fit of the framework was confirmed both through radiographic assessment and a Sheffield test, demonstrating an extremely precise adaptation of the bar to the implants.
The high accuracy of the Scan LogiQ system opens the possibility of further streamlining the clinical workflow, allowing, in selected cases, the reduction or elimination of the try-in phase of an aluminium bar, without compromising clinical safety. This approach enables a reduction in intermediate steps, faster delivery of the definitive restoration, and improved overall treatment efficiency, while maintaining high standards of accuracy, passivity, and predictability of the final outcome.
The Scan LogiQ system has proven to be a reliable tool for the digital management of full-arch implant rehabilitation, offering operational simplicity, rapid data acquisition, and high prosthetic accuracy.
The combination of scanning precision, passive fit control, and workflow optimization makes this system a valuable evolution compared to previously used techniques.

EXPERIENCE 6

Clinician:
Dr. Stefano Lombardo

Dental Laboratory:
Antonello Di Felice

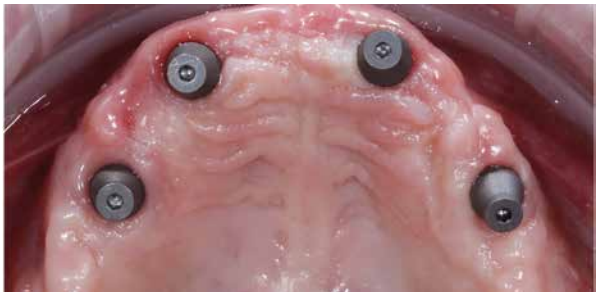
A 65-year-old patient presented with severe deterioration of the remaining dentition (Fig. 1). The treatment plan involved comprehensive rehabilitation of the maxillary arch as well as the fourth and sixth sextants. The four maxillary premolars were extracted at an early stage to promote bone healing in these severely compromised sites.
The definitive implant-prosthetic treatment plan consisted of a maxillary full-arch restoration supported by four tilted implants, preceded by an **All-on-4 immediate-loading provisional prosthesis**. In the mandibular arch, treatment included two implant-supported bridges in the fourth and sixth sextants, together with splinting and restoration of proper anterior guidance in the fifth sextant using the **Injection Moulding Technique**.

1 Initial situation.

For the definitive impressions, an innovative fully digital workflow was adopted. The process began with the acquisition of the functionally adjusted provisional restorations and their intermaxillary relationship. Subsequently, a conventional intraoral digital scanning protocol was used to capture the soft tissue anatomy. In a separate scanning step, following a dedicated acquisition strategy, the **One Shot IQ Scan Bodies** were recorded (Fig. 2).
The innovative aspect of the workflow lies in the acquisition of implant positions through the **Scan Flag IQ system**. Four rapid scans were performed in the central region of the dental arch, where all the prismatic scan regions of the Flag IQ components are located (Fig. 3). This approach enables implant position capture without soft tissue interference while minimizing the overall scan extension, thereby significantly reducing the potential for stitching errors generated by the intraoral scanner.

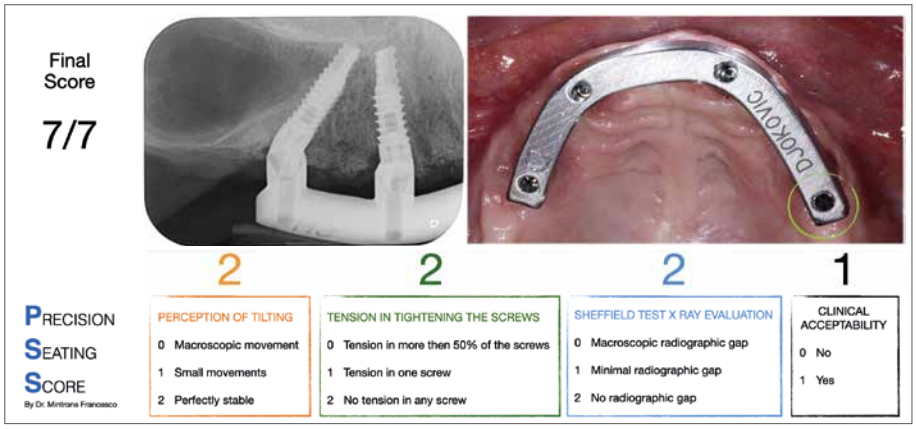
2 Placement of the One Shot IQ Scan Bodies.

3 Connection of the four Scan Flag IQ components.



The combination of limited-area scans performed under highly favourable acquisition conditions and their subsequent processing through the dedicated Assist LogiQ software generates a validated dataset of the three-dimensional implant positions. This information is then accurately aligned with the previously acquired 3D data, including the morphology of the provisional restorations, soft-tissue contours, and occlusal relationships. At the appointment following data acquisition, implant position accuracy was verified using an Aluminium/ Ergal verification bar. The framework was initially evaluated for passive seating by assessing its stability and the absence of tilting before screw tightening. Subsequently, the degree of tension during screw insertion was assessed. Finally, all screws except one were removed, and a radiograph was taken from the side contralateral to the remaining screw to perform a Sheffield test (Fig. 4). The verification bar was considered not only clinically acceptable but achieved the highest possible score in all performed assessments* according to the Precision Seating Score protocol (Dr. Francesco Mintrone).

*The tests were performed for comparison with other implant position capture methodologies and are not described in detail within this dossier.



4 Accuracy score assessment.

During the same appointment, a 3D-printed prototype of the final wax-up can be evaluated to assess aesthetics, phonetics, and the accuracy of the intermaxillary relationships. At the third appointment, the definitive restoration may be delivered directly, or alternatively, the titanium framework and the milled zirconia superstructure can be tried in prior to bonding, allowing for final adjustments to shade selection and soft-tissue compression profiles if required (Figs. 5, 6, 7). In this particular case, an intermediate try-in was scheduled at the third appointment. The passive fit of the definitive titanium framework was assessed using the same verification protocol previously applied to the aluminium test bar. In addition, areas exhibiting excessive pressure on the soft tissues beneath the pontic regions were identified and communicated to the laboratory for refinement. The occlusal and buccal-view photographs of the definitive titanium framework try-in (Figs. 8, 9) provided valuable information for the dental technician, Antonello Di Felice, enabling precise identification of areas requiring modification during the finishing phase in order to optimize the relationship between the prosthetic structure and the peri-implant soft tissues.

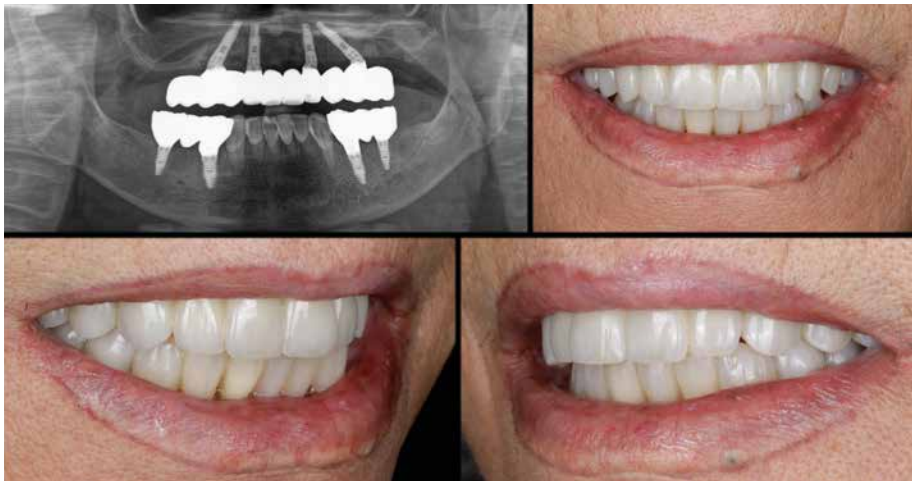
5 Titanium framework and milled zirconia restoration.

6 Framework try-in
7 and passive fit verification.

8 Photographs of the final titanium bar
9 try-in in both occlusal and buccal views.

10 Radiographic Sheffield verification performed with only the prosthetic screw inserted in the second quadrant.

During the third appointment, in addition to assessing the fit of the titanium bar, the shade of the aesthetic component and the occlusal relationships are also evaluated. Both parameters can still be modified, if necessary, before the final bonding procedure in the laboratory. For this step, a white fit-checking material may be used to stabilize the zirconia framework onto the titanium bar, as it is easier to remove than cyanoacrylate adhesive. Final try-in of the FP1 full-arch prosthesis prior to definitive bonding.
Antonello Di Felice performed a vestibular-layer ceramic stratification on the Katana YML zirconia framework. View of the rehabilitated maxillary arch on the day of delivery during the fourth appointment.
Final radiographic Sheffield verification performed with only the prosthetic screw inserted in the second quadrant. The radiopacity of the zirconia partially masks the interface between the titanium bar and the multi-unit abutments; nevertheless, the restoration demonstrates an extremely high level of accuracy (Fig. 10).
Panoramic radiograph (OPT) and extraoral control photographs obtained during the fourth appointment, on the day of prosthesis delivery (Fig. 11).
The fully digital rehabilitation workflow, based on the new protocols developed for full-arch restorations and distal edentulous extensions, demonstrates a very high level of accuracy. The Injection Moulding Technique applied in the fifth sextant completed the establishment of correct overbite, overjet, and anterior canine-guided occlusion.



11 Panoramic radiograph (OPT) and extraoral control photographs.

Notes

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