

## Fixed orthodontic appliances and AI software: Advancing treatment planning and management

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*DDP AI diagnostic models free orthodontists from the limitations of conventional scanning outputs, providing crown–root models that enhance precision and efficiency in digital treatment planning.*



*Dr Kamil Stefański*

**As an orthodontist, I derive immense satisfaction from employing cutting-edge technologies that significantly improve treatment efficiency and patient comfort. One of the key tools revolutionising orthodontic treatment in my practice is DDP AI, software developed by Polorto that employs artificial intelligence (AI).**

This system enables me to create precise diagnostic models in just 3 minutes. By transitioning seamlessly from scan files to detailed digital crown–root models, the automation of diagnostics using DDP AI significantly accelerates the 3D diagnostic and treatment planning process.

DDP AI extends beyond traditional scanning capabilities. Standard scan files often replicate the impressions obtained through physical impression trays. However, the diagnostic models generated by DDP AI from standard scan files—such as STL, PLY and OBJ—include structural anatomical data essential for accurate orthodontic treatment planning. These files can originate from any scanner, making the technology a cornerstone of my diagnostic and clinical workflow.

Moreover, DDP AI optimises the process of model creation for both diagnostic needs and subsequent clinical navigation tasks. This allows for quick, consistent and personalized treatment plans and gives the clinician the ability to forecast treatment outcomes and make necessary adjustments. Importantly, the system facilitates seamless interdisciplinary collaboration with other specialists, including maxillofacial surgeons, implant dentists and prosthodontists.

### **Features that enhance efficiency and precision**

#### **DDP AI offers a suite of features that are invaluable in my daily work:**

- ready-to-use model analyses and precise measurement capabilities;
- models containing comprehensive clinical data, including photographs, radiographs, facial scans, cephalometric radiographs, diagnostic descriptions, 3D treatment plans, visualisations and biomechanical planning;
- integration with virtual articulators or facebows, enabling treatment in maximal intercuspal position and centric relation;
- compatibility with [DDS-Pro](#), allowing me to work with appliances based on temporary anchorage devices, as well as with guided implant placement, maxillofacial surgery and zygomatic implants, among others; and
- the ability to design individual root positioning for aligner cases, automatically select sagittal plane appliances and archive data.

These capabilities enable me to develop complex treatment plans while monitoring patient progress at every stage, giving me complete control over the treatment process and supporting smooth collaboration with other dentists. Patients benefit from more efficient care and more predictable outcomes.

In my practice, I also use customised orthodontic appliances created using DDP AI digital diagnostic models. These models allow for precise planning of bracket placement and the preparation of devices tailored to the patient's needs. This ensures personalised treatment, whether using fixed orthodontic appliances or aligners, but minimal time investment.

### **Simplifying the workflow with digital integration**

The integration of [Digital Technical Studio](#) (DTS) software further enhances efficiency. This tool enables technicians and dentists to locally create virtual models and plan for aligner treatment, indirect bonding of fixed orthodontic appliances and custom retainers. The streamlined process for preparing transfer jigs for bracket placement ensures precision and reduces time spent on manual adjustments.

Technicians manage all preparatory work, delivering ready-to-use products for accurate bracket placement. This facilitates delegation within the clinic while maintaining treatment quality. Furthermore, 3D-printing technology integrated with DTS allows for the independent creation of custom orthodontic appliances.

DDP AI supports hybrid, staged treatment management, providing control over every phase of therapy. This flexibility allows precise appliance selection based on the patient's treatment phase. In complex cases requiring strategy adjustments, this approach saves both time and money.

## **Revolutionising orthodontic practice**

These advancements make orthodontic work more precise and efficient as well as less time-consuming. DDP AI ensures comprehensive control over the diagnostic and treatment processes, leading to faster and more predictable outcomes for patients, as well as competitive service pricing.

Moreover, these innovations enhance collaboration with patients and specialists, contributing to improved treatment quality. This is not merely a technological evolution; it represents a transformation of orthodontics that continues to shape the future of the field.



### FIXED APPLIANCES AND ARTIFICIAL INTELLIGENCE: HOW INNOVATIVE TECHNOLOGIES MAKE FIXED APPLIANCES TREATMENT PLANNING AND MANAGEMENT EASIER

| INPUT DATA                   | WORKING TIME/SOFTWARE | LICENSE FEE | WHO PERFORMS/CAN PERFORM       |
|------------------------------|-----------------------|-------------|--------------------------------|
| From scanner (stl./obj./ply) | 3 min "DDP-AI"        | max 19 EUR  | assistant/technician/clinician |

📍 Process supervised in office/live      💰 (outsourced production may lead extra charge)

### FIXED APPLIANCE PLANNING. CROWN-ROOTS SET-UP SIMULATION READY

| INPUT DATA   | WORKING TIME/SOFTWARE                      | LICENSE FEE | WHO PERFORMS/CAN PERFORM       |
|--------------|--------------------------------------------|-------------|--------------------------------|
| DDP AI model | 1-2 min/"DDP-Ortho" tools                  | 0 EUR       | assistant/technician/clinician |
| Next is ➡    | clin check/detailing stage 5 min/DDP-Ortho | 0 EUR       | assistant/technician/clinician |

### INDIRECT BONDING TRACE (JIG) PLANNING

| INPUT DATA                 | WORKING TIME/SOFTWARE      | LICENSE FEE  | WHO PERFORMS/CAN PERFORM |
|----------------------------|----------------------------|--------------|--------------------------|
| DDP-AI model with brackets | 2 min / "DTS" (IPA module) | max 5,25 EUR | assistant/technician     |

### JIGS PRODUCTION TIMING & COSTS AS TOTAL FROM ABOVE

| OUTPUT DATA          | WORKING TIME/SOFTWARE | LICENSE FEE                                     | WHO PERFORMS/CAN PERFORM       |
|----------------------|-----------------------|-------------------------------------------------|--------------------------------|
| Export stl with jigs | 10 +/- 2 min design   | Total license free<br>max (19+5,25) = 24,25 EUR | assistant/technician/clinician |

Go to printing stage ✅      📍 local costs of work time for jigs printing + jigs printing cost

Delegation of work possible at any stage, quick supervising quality and stages processing ready. The same DDP AI model is used for any other dental application.

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Table: Fixed appliances and artificial intelligence: how innovative technologies make fixed appliances treatment planning and management easier