

Smileloc Dental Implant Center's All-on-4 Digital Workflow

Using iCam Photogrammetry + Guided Surgery for a More Precise Full-Arch Smile

If you've been living with missing teeth, loose dentures, or teeth that can't be saved, you've probably wondered: **"Is there a way to get a secure, natural-looking smile again—without years of dental work?"**

At **Smileloc Dental Implant Center**, we offer **All-on-4 dental implants** using a **fully digital workflow** that includes:

- **Guided surgery** (so implant placement follows a carefully designed plan), and
- **Nobel Biocare's iCam photogrammetry** (to capture implant positions with very high accuracy for your new teeth).

This matters because the *fit* of a full-arch bridge is everything. The better the fit, the more comfortable, stable, and predictable your final result can be.

What does "digital workflow" mean—and why should you care?

A "digital workflow" simply means we're using connected digital tools from start to finish, such as digital planning and guided placement.

Instead of relying on estimation at different steps, digital workflows are designed to improve consistency between:

1. **Planning your implants,**
2. **Placing your implants,** and
3. **Designing your new teeth.**

On Nobel Biocare's guided surgery workflow page, they describe guided surgery as aiming for **higher accuracy and predictability of implant positions compared with freehand surgery**. They also reference studies reporting **lower swelling and edema with guided flapless surgery compared with freehand surgery** (when flapless is appropriate).

At Smileloc, the goal is simple: **plan carefully, place carefully, and restore carefully**.

What is iCam photogrammetry?

This is the part most patients haven't heard of—yet it's one of the biggest differences in how full-arch implant bridges can be made.

iCam is a photogrammetry system used to **capture the exact 3D position of your implants** so your bridge can be designed to fit accurately. Nobel Biocare describes it as a way to “simplify full-arch impressions” as part of the All-on-4 digital workflow.

A simple way to picture it

Think of iCam like a **high-precision camera measurement** of where your implants are in space—so the lab can design your teeth to match those positions closely.

What patients usually notice

Nobel Biocare highlights patient-centered benefits such as:

- **Less invasive scanning protocol**
- **A handheld device that scans extraorally** (from outside the mouth)
- **Greater accuracy, less chair-time, and fewer visits**

Why accuracy matters for full-arch bridges

A full-arch bridge is a single restoration that connects to multiple implants across a wide span. That means small measurement errors can add up.

One key goal is something called **passive fit**—it means the bridge should **seat naturally** on the implants without being forced into place.

Nobel Biocare explains passive fit matters for both:

- **Biological reasons** (like reducing concerns tied to bacterial accumulation and bone remodeling), and
- **Mechanical reasons** (like reducing framework stress, screw loosening/fracture risk, and chipping).

What accurate scans can lead to: better-fitting temporaries and finals

When implant positions are captured more accurately, the restorative team can design your bridge with fewer “workarounds.”

The goal is achieving **accurate screw-retained provisional and final restorations**, increasing predictability and minimizing reworks.

This often means a smoother path from:

- **Surgery → temporary teeth → final bridge**, with fewer avoidable adjustments.

How Smileloc compares to what many other clinics use

Many clinics provide excellent All-on-4 care. The difference is often *how* implants are planned and *how* implant positions are recorded for the bridge.

1) Traditional impressions (putty/molds)

Some clinics still capture implant positions using conventional impression materials and physical models. This can work well, but it’s more technique-sensitive and can be less comfortable for patients—especially in full-arch situations. (Modern studies often compare conventional methods directly against digital methods.)

2) Intraoral scanning only

Many clinics use an intraoral scanner for implant records. Intraoral scanning is a great tool in dentistry, but full-arch implant cases can be more challenging because the scan is built by “stitching” images across a long span—where small stitching errors can accumulate.

3) Freehand implant placement (no surgical guide)

Some clinics place implants freehand and then adapt the restoration afterward. Skilled clinicians can get good results this way—but guided approaches are designed to improve consistency

between the plan and the placement. Nobel Biocare's guided surgery page describes higher accuracy/predictability compared with freehand surgery.

What Smileloc does

We combine:

- **Guided surgery with ProXXi** (plan → place), and
- **iCam photogrammetry** (place → capture positions accurately → design the bridge).

Is photogrammetry really more accurate for full-arch implants?

For full-arch implant cases, research has been increasingly supportive of photogrammetry as a very accurate way to capture implant positions.

Here are a few examples:

- A **systematic review and meta-analysis** (published in 2025) evaluated accuracy (trueness and precision) and reported that **photogrammetry significantly outperformed intraoral scanners** for capturing implant positions in complete-arch or multi-implant prostheses.
- A **2025 in vitro study** (BMC Oral Health) compared conventional impressions, intraoral scanning, and photogrammetry systems (including **lcam4D**) for full-arch implant rehabilitation.
- A **2025 clinical research article** discussing complete-arch scanning notes that extra-oral photogrammetry has been proposed to address **stitching errors** that can happen when intraoral scanners “stitch” together many images across a full arch—and reports photogrammetry showing greater precision in their testing.

What this means: **photogrammetry is especially valuable in long-span, full-arch implant bridges—where tiny inaccuracies can become bigger fit problems.**