

# **Smith**<br/> **Nephew**

TSF<sup>O</sup> ALLY Deformity Correction Powered by Real Intelligence

#### **Examples of TSF° Ally Reports**

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Through the collaboration of surgeon and expert engineer, TSF° Ally serves to optimize TSF treatment for your patient and practice, by using dedicated software to conduct the x-ray analysis and accurately plan the hardware assembly

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#### Example of TSF° Ally Report

Pre-operative Planning Report

Malunion with Knee Arthroplasty

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Clinical	Details
Surgery Date	XX/XX/XXXX
Length Discrepancy	_
Axial Rotation Deformity	None
Preferred Proximal Ring Size and Type	155 mm
Preferred Distal Ring Size and Type	155 mm
Preferred Reference Ring	Proximal
Preferred Strut Type	Fast FX
Additional Notes	Proximal ring block, with middle ring being the
	reference ring
Initial Exertal Diana Dadiagraph	Initial Sagittal Diana Dadiagraph
B3	B

Patient ID	xxxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

		Deformi	ty Analysis: Frontal Plane	
Pre-Correction		ction	Joint Line Placement	
Joint A	ngle Mea	surements	Joint Line Placement	
Angle/	Measured	Normal		
Length		Range <sup>1</sup>	A DECEMBER OF THE DECEMBER OF	
mLPFA	_	85°-95°		
mLDFA	_	85°-90°	$mMPTA = 85^{\circ}$	
mMPTA	<b>85</b> °	85°-90°		
mLDTA	<b>99</b> °	86°-92°		
JLCA	<b>0</b> °	0°+/-2°		
MAD	—	+/- 3 mm		
			mMPTA = 85°	
I	Pre-Corre	ction		
Leng	gth Measu	irements		
Length	Measured	Discrepancy <sup>+</sup>		
Femur	Ι	—		
Tibia	360 mm	_		
Total Length	-	_		
†Disc	repancies me	asured from		
	bilateral radio	ograph.		
	Scaling met	thod:	mLDTA = 99°	
25.4	mm Calibrat	ion Sphere		
25.4 mm		n	mLDTA = 99°	

Patient ID	xxxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Deformity Analysis: Sagittal Plane			
Pre-Correction Joint Angle Measurements		ction	Joint Line Placement
		surements	Joint Line Placement
Angle	Measured	Normal	
		Range <sup>1</sup>	
PDFA	—	79°-87°	
ΡΡΤΑ	<mark>89</mark> °*	77°-84°	PPTA = 89°
ADTA	<b>78</b> °	78°-82°	
ACL	-	Within 5° of	
		total bony	
*Please	note: Knee	implant and	$PPIA = 89^{\circ}$
rotation to inaccu	of lateral im Irate joint m	age may lead easurements.	
Soft-t	issue Con	tribution†	
ST	C= ACL—PDF	А—РРТА	
	N/A		
†Please	note that only bo	ony deformity is	
corrected within this report. Soft-tissue		ort. Soft-tissue	
contributi	on is provided fo	r reference only.	
	Scaling met	hod:	
25.4	25.4 mm	on Sphere	ADTA = 78°
	-		

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Deformity Analysis: Apex			
Frontal Plane		Sagittal Plane	
Proximal Axis	Normal mMPTA of 90°	Proximal Axis	Mid-diaphyseal line
Distal Axis	Normal mLDTA of 89°	Distal Axis	Mid-diaphyseal line
Арех	15° Varus	Арех	4.7° Recurvatum
Angulation		Angulation	
Apex Location	125 mm proximal to	Apex Location	137.9 mm proximal to
(to respective joint line)	tibiotalar joint line	(to respective joint line)	tibiotalar joint line



Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Correction Analysis			
Planned Osteotomy Level	125 mm proximal to tibiotalar joint line		
Frontal Plane Angulation Correction	15° Varus		
Sagittal Plane Angulation Correction	4.7° Recurvatum		
Length Correction (along the axis)	4.9 mm		
Anticipated Post-Correction Bony Translation	The distal segment will translate 1 mm posterior to the proximal segment.		
Frontal Plane Correction	Sagittal Plane Correction		
4.9 mm 10 mm, 15 °	t must be clinically raviewed regard		
Proximal Segment Distal Segment	Ruler     Transverse Bisector		

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

	Correction Analysis						
Post-Correction Frontal			Frontal Plane	Sagittal Plane			
Joint Angle Measurements				Sagittal Flane			
Angle/	Measured	Normal					
Length			A REAL PROPERTY AND A REAL PROPERTY A REAL PRO	lust be chilically reviewed in			
mLPFA	—	85°-95°					
mLDFA	—	85°-90°					
mMPTA	<b>90°</b>	85°-90°	$mMPTA = 90^{\circ}$	$PPTA = 87^{\circ}$			
mLDTA	<b>89°</b>	86°-92°					
JLCA	<b>0</b> °	0°+/-2°					
MAD	—	+/- 3mm					
Post	Correctio	n Sagittal					
Joint /	Angle Mea	surements					
Angle	Measured	Normal Range <sup>1</sup>					
PDFA	_	79°-87°					
РРТА	87°*	77°-84°					
ADTA	<b>81°</b>	78°-82°					
*Please	e note: Knee	e implant and					
rotation	of lateral in	nage may lead					
to inaccu	ırate joint n	neasurements.					
F	Post-Corre	ection					
Len	gth Measu	irements					
Length	Measured	Residual					
		Discrepancy <sup>+</sup>					
Femur	_	—					
Tibia	367 mm	—	$mLDTA = 89^{\circ}$	ADTA = 81°			
Total Length	_	—					
†Discrepancies measured from				2 Contraction			
bilateral radiograph.							

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

TSF PI	anning
Length Correction (along the axis)	4.9 mm
Osteotomy Level (to respective joint line)	125 mm proximal to tibiotalar joint line
Reference Ring Placement	130 mm distal to knee joint line
Neutral Frame Height	190 mm
Neutral Strut Length	175 mm
Ring Sizes	155 mm Full (both proximal), 155 mm Full
Frontal Plane Correction	Sagittal Plane Correction
	<image/>
Reference Ring(s) Moving Ring(s) Joint Lines	<ul> <li>Ruler</li> <li>Osteotomy</li> <li>Center of Ring</li> </ul>

Patient ID	xxxxxxx	
Patient	Patient Name	
Surgeon	Dr. Smith	
Planning Date	XX/XX/XXXX	
Anatomy	Right Tibia	

TSF Planning					
Deformity Parameters					
	(Method of	f Planning: Ape	x = Correspon	ding Point)	Γ
AP View	AP View	Lateral View	Lateral View	Axial View	Axial
Angulation	Translation	Angulation	Translation	Angulation	Translation
15° Varus	0 mm	4.7° Apex	1.3 mm	0°	4.9 mm Short
		Posterior	Anterior		
		Mounting F	Parameters		
Referencing			Proximal		
AP View Frame	Offset		0 mm		
Lateral View Fr	ame Offset		35 mm posterior	to origin	
Rotary Frame A	ngle		0°		
Axial Frame Off	set		119.7 mm proxir	mal to (extrinsic) o	origin
The distance from the creased when extri	the reference ring to nsic length is added	o the origin is in- I.			
		Initial Stru	ut Settings		
Strut 1	Strut 2 📒	Strut 3 <mark>_</mark>	Strut 4	Strut 5	Strut 6
178	154	151	170	186	193
Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut
Initial F	rame in Front	tal Plane	Initial F	rame in Sagit	tal Plane

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

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Case Summary					
Deformity Analysis					
Frontal Plane Angulation			15° Varus		
Sagittal Plane A	Angulation		4.7° Recurvatum		
Leg Length Dise	crepancy Pre-Co	rrection	—		
		Correction	n Analysis		
Planned Osteot	omy Level		125 mm proxima	l to tibiotalar joint	line
<b>Total Anticipate</b>	ed Length Correc	tion	4.9 mm along the	e axis	
Leg Length Dise	crepancy Post-C	orrection	_		
		TSF Pla	anning		
Ring Sizes/Typ	es		Proximal: 155 mr	n Full (both proxir	mal rings)
Reference Ring			2 <sup>nd</sup> Ring of proximal ring block		
(Must be placed	d orthogonal to l	bone segment.)	(Proximal referencing)		
Reference Ring	Placement		130 mm distal to knee joint line		
Number of Stru	t Change-outs		0		
		Initial Stru	ut Settings		
Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
178	154	151	170	186	193
Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut	Medium Fast Fx ® Strut
		Parts	s List		
Part (Catalog Number)			Quantity		
155mm Ring (7107-0114)			2		
Fast Fx      R Identification Band Kit (7107-0340)			1		
Medium Fast Fx ® Strut (7107-0720)			6		
	Notes				
Knee implant and rotation of lateral image may lead to inaccurate joint measurements.					

We selected a mid-diaphyseal line for the proximal axis in the sagittal view due to the implantation of the tibia baseplate and the rotation of the lateral x-ray. The remaining abnormal PPTA may be inaccurate based on

Planned TSF using a 60 mm proximal ring block, with 2<sup>nd</sup> ring of block as the reference ring (proximal

referencing). 60 mm Threaded Sockets may be used to assemble the proximal ring block as shown.

Planned TSF using 155 mm distal ring based on preferences; however, a 130 mm ring would also fit based on soft-tissue measurements.

these factors.



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#### Example of TSF° Ally Report

Post-operative Planning Report

Equinus treated with TSF

Patient ID	xxxxxxx	
Patient	Patient Name	
Surgeon	Dr. Smith	
Planning Date	XX/XX/XXXX	
Anatomy	Left Foot	

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Post-Op Clinical Details			
Surgery Date	XX/XX/XXXX		
Prescription Start Date	XX/XX/XXXX		
Length Discrepancy	Distract 5 mm		
Axial Rotation Deformity	None		
Proximal Ring Size and Type	155 mm Full		
Distal Ring Size and Type	155 Foot Plate		
Reference Ring	Distal (Foot Plate)		
Structure at Risk (SAR)	Posterior Ankle Capsule		
Maximum Safe Distraction Rate	1 mm/day		
Additional Notes	Soft tissue correction		

Initial Strut Settings					
Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
248	230	200	98	101	190
Long Fast FX	Long Fast FX	Medium Fast FX	XS Fast FX	XS Fast FX	Medium Fast FX







Images courtesy of Eugene Stautberg MD

Patient ID	xxxxxxx	
Patient	Patient Name	
Surgeon	Dr. Smith	
Planning Date	XX/XX/XXXX	
Anatomy	Left Foot	

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Deformity Analysis						
	Method: TraumaCad					
Proximal Axis	Normal mLDTA of 89°	Proximal Axis	Mid-diaphyseal line of tibia			
Distal Axis	Center of talar dome	Distal Axis	Sagittal axis of foot			
AP View	3° Varus	Lateral View	48° Equinus			
Angulation		Angulation				
AP View	0 mm	Lateral View	0 mm			
Translation		Translation				
Frontal Pla	ne Deformity Analysis	Sagittal Pl	ane Deformity Analysis			





Reference Ring/SegmentMoving Segment

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Left Foot

TSF Mountin	g Parameters
AP View Frame Offset	7.5 mm Medial to Origin
Lateral View Frame Offset	9.4 mm Anterior to Origin
Axial Frame Offset	58.1 mm Distal to Origin (Extrinsic)
Rotary Frame Angle	8° Externally Rotated
Frontal Plane	Sagittal Plane
Reference Ring	Reference Ring
7.5 mm Medial 9.4 mm Anterior	
Ruler	<ul> <li>Reference Axis (Center of Talus)</li> <li>Center of Reference Ring</li> </ul>

Patient ID	xxxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Left Foot

Structure at R	isk Parameters
Structure at Risk	Posterior Ankle Capsule
AP View SAR Offset	0 mm
Lateral View SAR Offset	50 mm Posterior to Origin
Axial SAR Offset	9.2 mm Distal to Origin (Extrinsic)
Frontal Plane	Sagittal Plane
<b>Reference Ring and SAR Placement</b>	<b>Reference Ring and SAR Placement</b>
	S0 mm.Posterior           9.2 mm Distal
Structure at Risk Ruler	<ul><li>Reference Axis (Center of Talus)</li><li>Center of Reference Ring</li></ul>

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Left Foot

Case Summary							
Deformity Parameters							
AP View Ang	ulation	3° Varus		AP View Translation 0 mr		0 mm	
LAT View An	gulation	58° Plantar Flex	kion	LAT Vie	ew Translation	0 mm	
Axial View A	ngulation	0°		Axial V	iew Translation	5 mm Shor	t
		Мо	unting	Paramo	eters		
<b>AP View Fran</b>	ne Offset			7.5 mm Medial to Origin			
LAT View Fra	me Offse	t		9.4 mm Anterior to Origin			
Axial View Fi	rame Offs	et		58.1 m	m Distal to Origin (	Extrinsic)	
Rotary Frame	e Angle			8° Exte	rnally Rotated		
		Struct	ure at R	isk Par	rameters		
Structure at	Risk			Posterio	or Ankle Capsule		
AP View SAR	Offset			0 mm			
Lateral View	SAR Offs	et		50 mm Posterior to Origin			
Axial SAR Of	fset			9.2 mm	9.2 mm Distal to Origin (Extrinsic)		
		C	orrectio	n Anal	ysis		
Length Corre	ction			5 mm a	long the axis		
Anticipated F	Anticipated Post-Correction Bony Translation 0 mm						
Maximum Sa	fe Distrac	tion Rate		1 mm/c	lay		
<b>Correction Ti</b>	me			54 days	5		
Number of St	trut Chan	ge-Outs		6			
		S	trut Cha	ange-O	outs		
Change-Out	Strut	Overlap	Ove	rlap	Strut Change	e Str	ut Change
		Start Date	End	Date	From		То
а	2 (Orange)	38 (03/05/20)	5 (03/1	0 7/20)	7107-0730 Long FAST FX ®	7 Mediu	107-0720 Jm FAST FX ®
b	3 (Yellow)	0 (01/27/20)	2 (02/2	5 1/20)	7107-0720 Medium FAST FX (	7 ® Lon	107-0730 g FAST FX ®
С	4 (Green)	14 (02/10/20)	1 (02/1	7 3/20)	7107-0705 Extra Short FAST F>	7 ® Sho	107-0710 rt FAST FX ®
d	4 (Green)	29 (02/25/20)	3 <sup>,</sup> (03/0	4 1/20)	7107-0710 Short FAST FX ®	7 Mediu	107-0720 Jm FAST FX ®
е	5 (Blue)	13 (02/09/20)	1 (02/1	6 2/20)	7107-0705 Extra Short FAST F>	(® Sho	107-0710 rt FAST FX ®
f	5 (Blue)	30 (02/26/20)	3 (03/0	6 3/20)	7107-0710 Short FAST FX ®	7 Mediu	107-0720 Jm FAST FX ®



TSF<sup>\$</sup> ALLY Deformity Correction Powered by Real Intelligence

#### Example of TSF° Ally Report

Pre-operative Planning Report

Multi-apical Tibial Deformity

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Clinical	Details
Surgery Date	XX/XX/XXXX
Length Discrepancy	Right Leg 5 cm shorter than left
Axial Rotation Deformity	0° Rotational Deformity
Preferred Proximal Ring Size and Type	180 mm Full Ring
Preferred Distal Ring Size and Type	180 mm Full Ring
Preferred Reference Ring	Middle Ring
Preferred Strut Type	Fast FX
Additional Notes	Patient has a tibia malunion and was treated with a previous frame.
Initial Frontal Plane Radiograph	Initial Sagittal Plane Radiograph
a on melock	<image/>

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Deformity Analysis: Frontal Plane				
Pre-Corre	ction	Joint Line Placement		
Angle Mea	surements			
Measured	Normal			
	Range <sup>1</sup>			
<b>85°</b>	85°-95°			
<b>85°</b>	85°-90°			
<b>64</b> °	85°-90°			
<b>84</b> °	86°-92°			
<b>1</b> °	0°+/-2°	mLPFA = 85°		
69 mm	+/- 3 mm			
		$mLDEA = 85^{\circ}$		
Pre-Corre	ction			
gth Measu	irements			
Measured	Discrepancy <sup>+</sup>			
484 mm	2 mm			
344 mm	32 mm	mMPTA = 64°		
819 mm	48 mm	mLDFA = 85°		
	short			
crepancies me	asured from	mMPTA = 64°		
Dilateral laut	graph.			
Scaling met	thod:			
25.4 mn	ion Sphere	mLDTA = 84°		
	Pre-Corre Angle Mea Measured 85° 64° 84° 1° 69 mm Pre-Corre gth Measured 484 mm 344 mm 819 mm crepancies me bilateral radio Scaling met mm Calibrat	Deformion         Pre-Correction         85°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-90°         64°       85°-92°         1°       0°+/-2°         69 mm       +/- 3 mm         Discrepancyt         484 mm       2 mm         344 mm       2 mm         344 mm       32 mm         819 mm       48 mm         short       Scaling method:         scaling method:       25.4 mm		

Patient ID	xxxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Deformity Analysis: Sagittal Plane				
Pre-Correction		ction	Joint Line Placement	
Joint /	Joint Angle Measurements		Joint Line Placement	
Angle	Measured	Normal		
		Range <sup>1</sup>		
PDFA	—	79°-87°		
ΡΡΤΑ	<b>82°</b>	77°-84°	PPTA = 82°	
ADTA	80°	78°-82°		
ACL	-	Within 5° of	PPTA = 82°	
		total bolly		
Soft-1	tissue Con	tribution†	the second se	
ST	C= ACL-PDF	A—PPTA		
	N/A			
175				
†Please	†Please note that only bony deformity is			
corrected within this report. Soft-tissue		ort. Soft-tissue		
contribution is provided for reference only.		or reference only.		
	Scaling met	hod:		
25.4	mm Calibrati	on Sphere		
	1			
25.4 mm				
		1.1	ADTA = 80	

Smit	hN	en	hew
JIIIC		Eh	

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Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Deformit	y Analysis: Frontal Plar	ne Apices	
Proximal Axis	Match normal contralateral mMPTA of 85°		
Middle Axes	Mid-diaphyseal lines		
Distal Axis	Match normal contralateral mLDTA	of 86°	
Apex Angulations	Proximal: 37° Varus		
	Middle: 14° Valgus		
	Distal: 3° Valgus		
Apex Locations	Proximal: 77.8 mm distal to proxim	nal joint line	
(to respective joint line)	Middle: 167 mm proximal to distal	joint line	
Proximal Apex	Middle Apex	Distal Apex	
	Distal Middle Segment	Buler	
Proximal Segment     Proximal Middle Segment	Distal Middle Segment     Distal Segment	Ruler     Transverse Bisector	

23331 V2 TSF Ally Sample Report 09/20

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Deformit	y Analysis: Sagittal Pla	ne Apices
Proximal Axis	Normal PPTA of 84°	
Middle Axes	Mid-diaphyseal lines	
Distal Axis	Normal ADTA of 82°	
Apex Angulations	Proximal: 5° Procurvatum	
	Middle: 3° Recurvatum	
	Distal: 3º Recurvatum	
Apex Locations	Proximal: 89.8 mm distal to proxim	nal joint line
(to respective joint line)	Middle: 233.9 mm proximal to dist	al joint line
Proximal Apex	Middle Apex	Distal Apex
B4° PPTA B9.8 mm	The second	
Proximal Segment     Proximal Middle Segment	Distal Middle Segment Distal Segment	Ruler     Transverse Bisector

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

TSF<sup>◊</sup> ALLY Deformity Correction Powered by Real Intelligence

Correction Analysis				
	Proxima	l Frame	Middle Frame	Distal Frame
Planned Osteotomy Level	65 mm d	istal to	215 mm proximal to tibiotalar joint line	81 mm proximal to tibiotalar joint line
Frontal Plane Angulation Correction	36.9° Vai	rus	14.5° Valgus	3° Valgus
Sagittal Plane Angulation Correction	5.3° Proc	urvatum	3° Recurvatum	3.2° Recurvatum
Length Correction (along the axis)	12.6 mm		2.1 mm	0.7 mm
Anticipated Post-Correction	Proxima	l Frame:	The proximal middle s	egment is 7.8 mm
Bony Translation	medial ar	dial and 2.2 mm posterior to the proximal segment.		
	Middle F al and 1 i	<b>rame:</b> Th mm anteri	e proximal middle seg for to the distal segme	ment is 12 mm medi- nt.
	Distal Fr mm ante	r <b>ame:</b> The rior to the	e distal segment is 1.9 distal middle segment	mm medial and 1.9
Frontal Plane Correction	1		Sagittal Plane Co	orrection
12.6 mm   7.8 mm, 36.9     2.1 mm   13.7 mm, 14.5     2.3 mm, 3°      Proximal Segment	Dista	al Middle Seg	12.6 mm 15.1 mm, 5.3 ° 2.1 mm 3.1 mm, 3 ° .7 mm 2.5 mm, 3.2 °	Ruler

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Correction Analysis					
Post-Correction Frontal		n Frontal	Frontal Diano	Sagittal Diana	
Joint A	Angle Mea	surements	Frontal Plane	Sagittai Plane	
Angle/	Measured	Normal			
Length		Range <sup>1</sup>	mMPTA = 85°	$PPTA = 84^{\circ}$	
mLPFA	<b>85°</b>	85°-95°	· · · · ·		
mLDFA	85°	85°-90°			
mMPTA	<b>85</b> °	85°-90°			
mLDTA	<b>86</b> °	86°-92°		T	
JLCA	<b>1°</b>	0°+/-2°			
MAD	3 mm	+/- 3mm		30	
Post- Joint A	Correctio	n Sagittal surements			
Angle	Measured	Normal Range <sup>1</sup>			
PDFA	_	79°-87°			
ΡΡΤΑ	<b>84</b> °	77°-84°			
ADTA	<b>82°</b>	78°-82°			
F	Post-Corre	ection			
Leng	gth Measu	rements			
Length	Measured	Residual			
		Discrepancy <sup>+</sup>		1 AL 1 AL 1	
Femur	484 mm	2 mm			
Tibia	369 mm	7 mm			
Total	856 mm	11 mm			
Length		short			
†Dise	crepancies mea	asured from	mLDTA = 86°		
	bilateral radio	graph.		$ADIA = 82^{\circ}$	

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

TSF<sup>\$</sup> ALLY Deformity Correction Powered by Real Intelligence

TSF Planning				
Proximal Frame	Middle Frame	Distal Frame		
15.6 mm	4.1 mm	6.7 mm		
65 mm distal	215 mm proximal	81 mm proximal		
135.5 mm distal		31.1 mm proximal		
118 mm	135 mm	77.7 mm		
122 mm	135 mm	98 mm		
180 mm, 180 mm	180 mm, 180 mm	180 mm, 155 mm		
	TSF Plannin Proximal Frame 15.6 mm 65 mm distal 135.5 mm distal 118 mm 122 mm 180 mm, 180 mm	TSF Planning         Proximal Frame       Middle Frame         15.6 mm       4.1 mm         65 mm distal       215 mm proximal         135.5 mm distal       135 mm         118 mm       135 mm         122 mm       135 mm         180 mm, 180 mm       180 mm, 180 mm		

#### **Frontal Plane Correction**



Joint Lines





Center of Ring

•

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

	TSF Planning: Proximal Frame				
Proximal Frame Deformity Parameters					
	(Method of	f Planning: Ape	x = Correspond	ding Point)	1
AP View	AP View	Lateral View	Lateral View	Axial View	Axial
Angulation	Translation	Angulation	Translation	Angulation	Translation
36.9° Varus	0 mm	5.3° Apex	1.1 mm	0°	15.6 mm short
		Anterior	Posterior		
	Proxi	mal Frame Mo	ounting Param	eters	
Referencing			Distal		
AP View Frame	Offset		0 mm		
Lateral View Fra	ame Offset		40 mm posterior	to origin	
Rotary Frame A	ngle		0°		
Axial Frame Off	set		70.6 mm proxima	al to (extrinsic) or	igin
The distance from the reference ring to the origin is increased when extrinsic length is added.					
	Prox	imal Frame In	itial Strut Set	tings	
Strut 1	Strut 2	Strut 3 📒	Strut 4	Strut 5	Strut 6
130	95	84	89	119	155
Medium Strut	Short Strut	Extra Short Strut	Extra Short Strut	Medium Strut	Medium Strut
Initial F	rame in Front	tal Plane	Initial Fr	ame in Sagit	tal Plane
Initial Frame in Frontal Plane					

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

TSF Planning: Middle Frame					
Middle Frame Deformity Parameters					
(Method of Planning: Apex = Corresp				ding Point)	1
AP View	AP View	Lateral View	Lateral View	Axial View	Axial
Angulation	Translation	Angulation	Translation	Angulation	Translation
14.5° Valgus	0 mm	3° Apex	3.6 mm	0°	4.1 mm Short
		Posterior	Anterior		
Middle Frame Mou		unting Parame	eters		
Referencing			Proximal		
AP View Frame	Offset		0 mm		
Lateral View Fra	ame Offset		40 mm posterior	to origin	
Rotary Frame A	ngle		0°		
Axial Frame Off	set		21 mm proximal	to (extrinsic) orig	in
The distance from the reference ring to the origin is increased when extrinsic length is added.					
	Mid	dle Frame Ini	tial Strut Settings		
Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
126	131	157	151	118	120
Short Fast Fx	Short Fast Fx	Medium Fast Fx	Medium Fast Fx	Short Fast Fx	Short Fast Fx
Initial F	rame in Front	tal Plane	Initial F	rame in Sagit	tal Plane
Initial Frame in Frontal Plane		K			

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

TSF Planning: Distal Frame					
Distal Frame Deformity Parameters					
	(Method of	f Planning: Ape	x = Correspond	ding Point)	
AP View	AP View	Lateral View	Lateral View	Axial View	
Angulation	Translation	Angulation	Translation	Angulation	Translation
3° vaigus	0 mm	3.2° Apex	3.9 mm	00	6.7 mm Short
	Diet	Posterior		<b>t</b> eve	
Deferencing	Dist	ai Frame Mou	Distal	ters	
AB View Frame	Offcat				
AP View Frame	ame Offcet		20 mm posterior	to origin	
Potary Frame A					
Axial Frame Off	fset		56 7 mm distal to	(extrinsic) origin	1
The distance from	the reference ring to	the origin is		(exemble) origin	•
increased when ext	trinsic length is adde	ed.			
	Dis	tal Frame Init	ial Strut Setti	ngs	
Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
94	95	95	101	97	91
Extra Short	Extra Short	Extra Short	Extra Short	Extra Short	Extra Short
Fast Fx	Fast Fx	Fast Fx	Fast Fx	Fast Fx	Fast Fx
Initial F	rame in Front	tal Plane	Initial Fi	rame in Sagit	tal Plane
		Z			

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

TSF<sup>◊</sup> ALLY Deformity Correction Powered by Real Intelligence

Parts List			
Part (Catalog Number)	Quantity		
180 mm Ring (7107-0115)	3		
155 mm Ring (7107-0114)	1		
Standard Identification Band Kit (7107-0320)	1		
Fast Fx Identification Band Kit (7107-0340)	2		
Medium Strut (7107-0220)	3		
Short Strut (7107-0210)	3		
Extra Short Strut (7107-0205)	2		
Medium Fast Fx Strut (7107-0720)	2		
Short Fast Fx Strut (7107-0710)	6		
Extra Short Fast Fx Strut (7107-0705)	6		

**Notes** 

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia

Case Summary					
		Deformity	/ Analysis		
Proximal Defor	mity Angulation	5	36.9° Varus, 5.3°	Procurvatum	
Middle Deformi	ty Angulations		14.5° Valgus, 3° Recurvatum		
Distal Deformit	y Angulations		3° Valgus, 3.2° Recurvatum		
Leg Length Disc	crepancy Pre-Co	rrection	Right Lower Limb	is 48 mm shorter	than Left
		Correctio	n Analysis		
Planned Osteot	omy Levels		Proximal: 65 mm	distal to knee joir	nt line
			Middle: 215 mm j	proximal to tibiota	ılar joint line
			Distal: 81 mm pro	oximal to tibiotala	r joint line
Total Anticipate	ed Length Correc	tion	26.4 mm along th	ie axis	
Leg Length Disc	crepancy Post-C	orrection	0 mm		
	TSF Planning				
Ring Sizes/Types			Proximal: 180 mm Full		
			Middle: 180 mm Full and 180 mm Full		
		Distal: 155 mm F	ull		
Reference Ring		Proximal Middle R	ing and Distal		
Reference Ring Placement			Proximal Middle:	135.5 mm distal t	o knee joint line
	Proxi	mal Frame In	itial Strut Set	tinas	
Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
130	95	84	89	119	155
Medium Strut	Short Strut	Extra Short Strut	Extra Short Strut	Medium Strut	Medium Strut
	Mide	dle Frame Init	tial Strut Sett	ings	
Strut 1	Strut 2	Strut 3 <mark>_</mark>	Strut 4	Strut 5	Strut 6
126	131	157	151	118	120
Short Fast Fx	Short Fast Fx	Medium Fast Fx	Medium Fast Fx	Short Fast Fx	Short Fast Fx
	Dis	tal Frame Init	ial Strut Setti	ngs	
Strut 1	Strut 2	Strut 3 <mark>_</mark>	Strut 4	Strut 5	Strut 6
94	95	95	101	97	91
Extra Short	Extra Short	Extra Short	Extra Short	Extra Short	Extra Short
Fast Fx	Fast Fx	Fast Fx	Fast Fx	Fast Fx	Fast Fx



TSF<sup>\$</sup> ALLY Deformity Correction Powered by Real Intelligence

#### Example of TSF° Ally Report

Post-operative Planning Report

Multi-apical Tibial Deformity treated with TSF

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia (Proximal Frame)

TSF<sup>\$</sup> ALLY Deformity Correction Powered by Real Intelligence

		Post-Op Cli	nical Details	5	
Surgery Date			XX/XX/XXXX		
Prescription Start	: Date		xx/xx/xxxx		
Length Discrepan	ісу		Per pre-op planning		
Axial Rotation De	formity		0°		
Proximal Ring Siz	e and Type		180 mm, 2/3rd (Open between Struts 4 & 5)		
Distal Ring Size a	and Type		180mm Full		
Reference Ring			Distal		
Structure at Risk	(SAR)		Concavity of the	deformity	
Maximum Safe D	istraction Rate		1 mm/day		
Additional Notes					
		Initial Str	ut Settings		
Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
143	134	91	127	157	188
Short Fast FX	Short Fast FX	X-Short Fast FX	Short Fast FX	Medium Fast FX	Medium Fast FX
(7107-0710)	(7107-0710)	(7107-0705)	(7107-0710)	(7107-0720)	(7107-0720)
Initial Fro	ontal Plane Ra	adiograph	Initial Sa	gittal Plane R	adiograph
		AP 3/4	HT		1/3 LAT

Images courtesy of Evgeny Dyskin MD

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia (Proximal Frame)

TSF Mountin	g Parameters
AP View Frame Offset	4.8 mm Medial to Origin
Lateral View Frame Offset	32.9 mm Posterior to Origin
Axial Frame Offset	127.6 mm Distal to Origin (Extrinsic)
Rotary Frame Angle	0° - based on TraumaCad Measurements
Structure at R	isk Parameters
Structure at Risk	Concavity of the deformity
AP View SAR Offset	20.8 mm Medial to Origin
Lateral View SAR Offset	19.2 mm Posterior to Origin
Axial SAR Offset	0 mm Proximal to Origin
Frontal Plane	Sagittal Plane
<b>Reference Ring and SAR Placement</b>	<b>Reference Ring and SAR Placement</b>
Structure at Risk Master Tab	Reference Ring Osteotomy

Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia (Proximal Frame)

Deformity Analysis			
Method: TraumaCad			
Proximal Axis	Normal mMPTA of 87°	Proximal Axis	Normal PPTA of 84°
Distal Axis	Mid-diaphyseal line	Distal Axis	Mid-diaphyseal line
AP View Angulation	26.3° Varus	Lateral View Angulation	3.7° Apex Anterior
AP View Translation	0 mm	Lateral View Translation	0.6 mm Posterior
Frontal Plane Deformity Analysis		Sagittal Plan	e Deformity Analysis



Patient ID	xxxxxxx
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia (Proximal Frame)

TSF Correction Analysis		
Frontal Plane Angulation Correction	26.3° Varus	
Sagittal Plane Angulation Correction	3.7° Procurvatum	
Length Correction	15.6 mm about the axis	
Anticipated Post-Correction Bony Translation	The proximal segment will translate 9.5 mm lateral to the distal segment.	
Frontal Plane Correction Analysis	Sagittal Plane Correction Analysis	



Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia (Proximal Frame)

Case Summary								
		De	formity	Paran	neters			
AP View Ang	ulation	26.3° Varus		AP View Translation 0			) mm	
LAT View An	gulation	3.7° Apex Anter	rior	LAT V	<b>F View Translation</b> 0.6 mm Posterior			
Axial View A	ngulation	0°		Axial V	View Translation	15.6	mm Short	
		Ма	ounting	Param	eters			
<b>AP View Fran</b>	ne Offset			4.8 mm Medial to Origin				
LAT View Fra	me Offset	:		32.9 mm Posterior to Origin				
Axial View Fi	rame Offse	et		127.6	mm Distal to Origin			
<b>Rotary Frame</b>	e Angle			0				
		Struct	ure at R	isk Pa	rameters			
Structure at	Risk			Concav	vity of Deformity			
AP View SAR	Offset			20.8 m	nm Medial to Origin			
Lateral View	SAR Offse	et		19.2 mm Posterior to Origin				
Axial SAR Of	fset (to Ex	trinsic Origin)		0				
		C	orrectio	n Ana	lysis			
Length Corre	ction			15.6 mm about the axis				
Anticipated Post-Correction Bony Translation			The proximal segment will translate 9.5 mm medial to the distal segment.					
Maximum Safe Distraction Rate			1 mm/day					
Correction Time			27 Days					
Number of S	trut Chang	je-Outs		2				
		S	Strut Cha	ange-(	Duts			
Change-Out	Strut	Overlap	Ove	rlap	Strut Change	e	Strut Change	
		Start Date	End I	Date	From		То	
а	3 (Yellow)	12 (01/10/20)	11 (01/11	3 1/20)	7107-0705 Extra Short FAST ®	FX	7107-0710 Short FAST FX ®	
b	4 (Green)	9 (01/07/20)	14 (01/12	4 2/20)	7107-0710 Short FAST FX	R	7107-0720 Medium FAST FX ®	
			No	tes				
Case will be se	ent via spat	ialframe.com ond	ce plan is a	approve	d.			

Patient ID	XXXXXXXX
Patient	Patient Name
Surgeon	Dr. Smith
Planning Date	XX/XX/XXXX
Anatomy	Right Tibia (Proximal Frame)

References			
1. Standard SC, Her	zenberg JE, Conway JD, Siddiqui NA, McClure PK. The Art of Limb Alignment. 8th ed.		
Baltimore: Rubii	n Institute for Advanced Orthopedics, Sinai Hospital of Baltimore, 2019.		
	Glossary		
Joint Angle Na	mes		
Angle (°)	Complete Name of Joint Angle		
mLPFA	mechanical Lateral Proximal Femoral Angle		
mLDFA	mechanical Lateral Distal Femoral Angle		
mMPTA	mechanical Medial Proximal Tibial Angle		
mLDTA	mechanical Lateral Distal Tibial Angle		
JLCA	Joint Line Convergence Angle		
MAD	Mechanical Axis Deviation		
PDFA	Posterior Distal Femoral Angle		
ΡΡΤΑ	Posterior Proximal Tibial Angle		
ADTA	Anterior Distal Tibial Angle		
ACL	Anterior Cortical Lines		

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