## **HE | HOMAG**

# Always one cut ahead.

#### intelliDivide

The optimization software for panel dividing on saws and nesting machines.

	Recommended solution The Danase of binary (SAWTEQ) Source (Sama) (SAWTEQ) Source (SAWTEQ) So										
超alanced solution     百 12.19% ① 00.54h 回 28	Overview Parts Materi	al Key figures									
Alternative solutions	Material	Production	Mater	ial costs							
My Optimized for handling	Waste	12.19 % Production time	00:54 h Materi	al costs 1439.53 €							
E 12.38% Ø 00.63h	Waste + offcuts	33.54 % Parts (plus parts)	154 (+0) Materi	al costs/part 9.35 €							
	Whole boards Small offcuts (required/produced)	28 +2 (-0 / +2)	Costs	of boards+ offcuts 1439.53 €							
Optimized for other		and a state of the second									
Opinized in the		all a second	the second								
	and the second second	and the second se	00002 P2_lcyWhite_19_2800	2070							
1 the second sec											
Minimal material costs	W-ROBE-TOP 1980-099	W-ROBE-TOP Steases	W-ROBE-TOP 1964:1999	W-ROBE-TOP S984699							
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Comparison											
	W-ROBE-BASE 9644570	W-ROBE-TCP 598-599	W ROBE BASE 994673	W ROBE BASE 944d/b							
Compare alternatives											
Compare alternatives.											

YOUR SOLUTION

## My laptop doesn't just update me with the daily news, it also provides me with optimized cutting patterns.

00003 4



## **intelliDivide** – The optimization software for panel dividing on saws and nesting machines

It's a known fact among carpenters that creating cutting and nesting patterns manually causes additional hours in work preparation that could be used in other ways. Everyone wants to minimize the time required and achieve efficient results. That's exactly what intelliDivide offers – the optimization software for panel dividing. intelliDivide makes your work easy: conveniently upload a parts list and begin the optimization with a single click. Cutting patterns are calculated automatically and immediately, without any manual intermediate steps or time-consuming settings to be made. And all without having to invest in software and computing power, because intelliDivide is a web-based app that runs in the cloud.

### YOUR SOLUTION

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- **05** Creating an optimization
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### What is special about intelliDivide?

With many optimization solutions on the market, the operator has to configure numerous settings and perform manual intermediate steps when working with the software until the desired result is achieved: from the installation of the software and setting of the machine and optimization parameters through to post-optimization.

#### INTELLIDIVIDE TAKES CARE OF ALL OF THIS FOR YOU!

- ✓ Simple start log in and get started. No installation necessary!
- ✓ Adoption of machine settings
- ✓ Post-optimization and variant settings
- ✓ Re-sorting of the strips
- ✓ Comparison of results
- ✓ Proposal of the best solution
- ✓ Direct transfer of results to the machine
- ✓ Archiving and deletion of processed jobs

## Your benefits at a glance

#### **MORE TIME FOR OTHER TASKS**

intelliDivide optimizes the cutting patterns for you. This makes manual calculation a thing of the past.

## OPTIMIZATION BASED ON THE DAY'S OBJECTIVES

intelliDivide always calculates multiple alternatives for you to select, based on waste, short machine running time, easy handling, lowest material costs and much more.

#### **PRODUCTION DATA AT THE TOUCH OF A BUTTON**

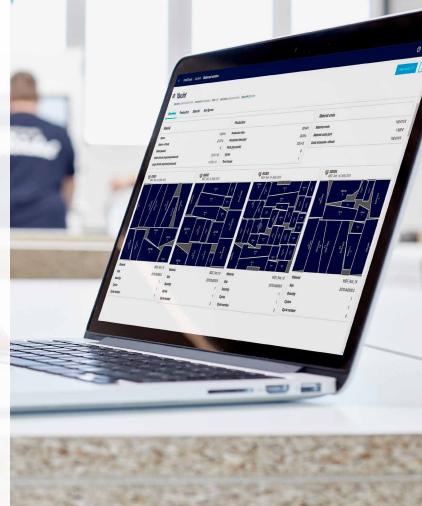
intelliDivide generates data for panel storage, cutting, nesting and labeling.

#### MATERIAL MANAGEMENT INCLUDED

intelliDivide provides the central management of material types and panel sizes for your optimization free of charge.

#### **NESTING PATTERNS FOR THE CNC**

intelliDivide also optimizes nesting patterns for your CNC machine. One software interface for two panel dividing technologies!

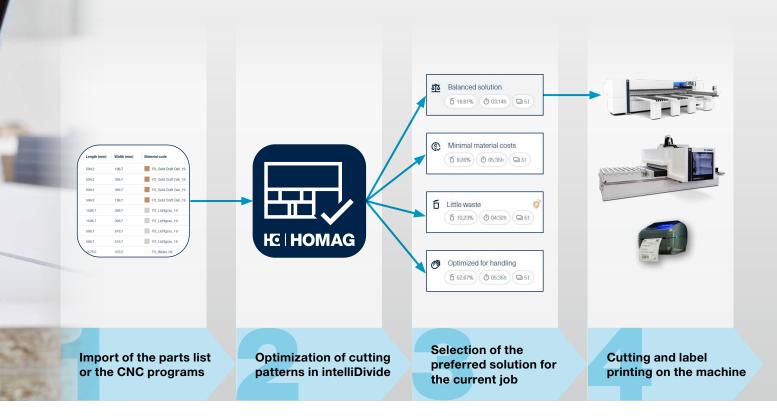


Tł	The five highlights					
1	EASY TO USE Very easy to get started thanks to intuitive and clear operation					
2	SOFTWARE AS A SERVICE Transparent and fair costs, always up to date, regardless of the number of users or the end device					
3	OPTIMAL RESULTS Several optimization algorithms simultaneously calculate a large number of variants					
4	MULTIPLE SOLUTIONS Simultaneous calculation of several alternative solutions with selection option					
5	INTELLIGENTLY NETWORKED Optimal interaction with the HOMAG apps for perfectly networked digital production					

## **Creating an optimization**

It's that easy!

HE.



## **In a nutshell:** The functions of a cutting optimization

#### **Creating or importing parts lists**

The most important part of creating a cutting optimization is the parts list. There are several options available to you so that you can work with your parts list in intelliDivide:

- Manual entry of the parts list directly into intelliDivide
- **Import** from a text file or Excel list, including CNC programs for nesting
- Sending directly to intelliDivide via HOMAG productionManager
- Sending via a cloud interface (API interface) from CAD/CAM and ERP systems
- Automatic import with the HOMAG File Agent (see p. 16). The optimization can also be started automatically (optional).

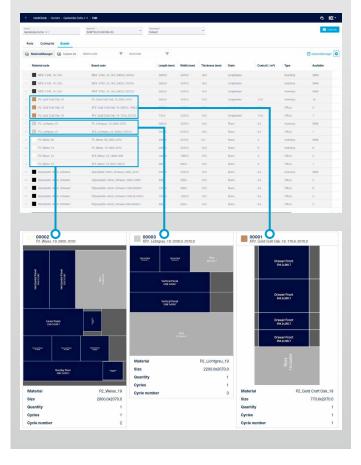
#### Managing panel data

In addition to the parts list, intelliDivide requires information about the panel materials that are to be used for cutting. You can use various options to manage your panels:

- Direct access to the panel data in HOMAG materialManager. This central material management system provides the material types and – in conjunction with the materialAssist Boards app – also the material stocks and is directly linked to intelliDivide.
- **Drop-down list selection:** Even if the information about which panel material is required is usually transferred directly with the parts list, material can easily be added or changed later.

**Result:** intelliDivide sorts the material and creates separate cutting patterns for each material type.

Gard	erobe Eiche 1+1		SAWTEQ	15-300 WA #0			urmier". xfault		-					<b>m</b> 9	9 a le
P	rts Cutting list	Boards													
Della	angeon	₹ Material o	ed#	Ŧ	Quartety		Ŧ						T	Import	
	Position / Artikel	Material code		Description		Length (mm)	Width (mm)	Grain	Tomplate	Quantity	Kundensuffrag	Edge front			
	1	P2_Gold Craft	Oak_19	Drawer Front		594.2	198.7	Longthware		1	Garderobe Elche 1+1	AB5_Ecte_1.2,23.3M	1	-	
	317	P2, Gold Craft	Oak, 19	Drawer Front		594.2	399.7	Longflwise		347	Garderobe Eiche 1+1	ABS_Echo_1.3_23_HM	1	-	1
	1	P2, Ooks Cran	04,19	Drawer Front		604.2	389.7	Longthwise	-	310	Garderobe Elche 1+1	AB3_Eche, 1.3, 23_HM	1		1
	1	P2, Gold Croft	Ouk_19	Drawst Front		5942	1987	Longthwise		31	Garderoby Eiche 1+1	ABS_Exten_13.23_HM	1	-	1
	2	P2_Lichtgrau	39	Vertical Panel		1598.7	228.7	None	1	1	Garderobe Eiche 1+1	123, Achangrau, 100, 43	1	-	1
	2	P2_Lichtghau	19	Writical Park		1608.7	298.7	None	1	11	Garderobe Eiche 1+1	123, Achelgrau, 1.00, 43	1	-	
	1	P2_Lichtgrau	19	Vetical Pane		566.7	\$19.7	None	1	1	Garderobe Eiche 1+1	123, Achadgeau, 100, 42	1	-	1
	ð.	P2_Lichtgrau	19	Vertical Pane		698.7	618.7	None	1	di 👘	Garderobe Eiche 1+1	123_Achatgrau_100_43	1	-	1
	2	P2_Wess_09		Ruckward		1575.0	975.0	None	1	347	Garderobe Eiche 1+1		1	-	1
	ас	P2_Wess_08		Rickward		675.0	1175.0	None	1	10	Garderobe Eiche 1+1		1		1
	£	P2_Weiss_19		Cover Panel		1199.7	6387	None	1	1	Garderobo Eiche 1+1	ABS_Weeks_2_23_HM	1	-	1
	2	P2_Wess_19		Overlay Door		1582.7	392.7	None	1	1	Garderobe Eiche 1+1	A83_Weins, 2, 23, HM	1	-	1
	1	P2_Wess_19		Vertical Park		562.0	503.0	None	1	1	Garderobe Eiche 1+1	ABS_Wess_2,23_HM	1		1
	1	P2_Wess_19		Horizontal Pr	end .	571.5	500.0	None	1	1.	Garderobe Eiche 1+1	ABS_Ween_2_23_HM	1		
	à.	P2_Weiss_19		Horizontal Pa	iei liei	671.6	600.0	None	1		Gorderoba Eiche 1+1	ABS_Weins_2_23_HM	1	1	1
	2	P2_Wess_19		Horstontal Ps	ind	262.0	298.7	None	1	30	Garderobe Eiche 1+1	AB5_Wean_2,22,HM	1	1	1
	10	P2_Webs_19		Horizontal Pa	na l	1102.0	610.7	None	1	215	Garderobe Eiche 1+1	ADS_WHAT_2_22_HM	1		ì



#### **Reusing panel offcuts**

When managing your panels, you can also record existing or resulting offcuts after cutting and make them available for the next optimization:

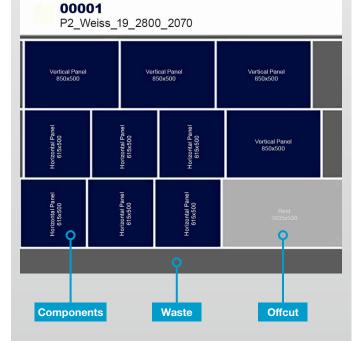
- **Define individually: What is an offcut?** In intelliDivide, you can define the dimensions from which a waste part is marked as an offcut and therefore reused.
- Optional: Connection to woodStore storage
   software. If you use a HOMAG storage system with the
   woodStore software, the panel data can be imported
   using materialManager, the central material management
   system from HOMAG. In this case, woodStore is the leading
   system. Offcuts created on the saw are automatically
   created in woodStore and are therefore also available in
   materialManager and in intelliDivide for the next optimization.

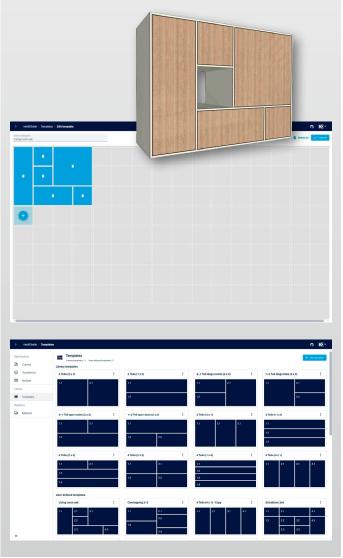
#### Using templates (for saws)

To intentionally keep components together and perform cutting in a specified arrangement (e.g. with a continuous veneer pattern for furniture fronts), you can use templates in intelliDivide:

- Selection from the template library: A library with a wide range of templates is available directly in the software. The components within the template are assigned directly in the parts list.
- Individual templates: New templates can be created easily

   according to current requirements.





## In a nutshell:

The functions of a cutting optimization

#### For saws: Machine parameters

Most of the parameters are automatically adopted from your saw or from HOMAG machine templates. Important parameters can also be set individually:

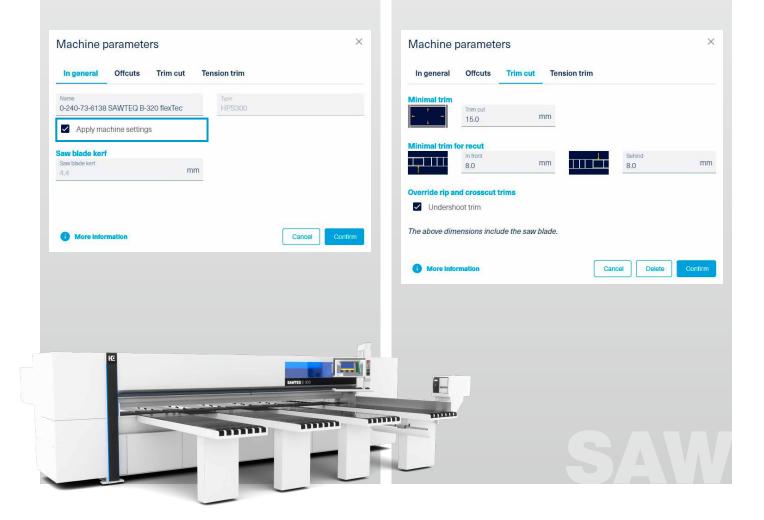
- Cutting length and program fence travel
- Saw blade thickness
- Setting for offcut sizes
- Evaluation of the offcuts in % of the material value
- Trims and stress relief cuts (tension trims)

#### For saws: Material-dependent parameters

Some parameters can be set on a material-specific basis. To do this, you can create material groups and set the following properties individually in materialManager (central material management from HOMAG):

- Offcut sizes
- Package height
- Trims
- Stress elimination cuts

In intelliDivide, the operator decides whether to use the general machine parameters or the material-specific settings.



#### For CNC machines: Optimization parameters for nesting

When dividing panels in the nesting process, intelliDivide is different in some aspects from the saw version:

- Workpieces created with the HOMAG CNC programming system woodWOP are used for nesting.
- intelliDivide calculates both rectangular and free-formed geometries.
- For components with large cut-outs, additional parts can be placed in the cut-out (part-in-part nesting).
- For better utilization of the protection board, the "extended computing time" option can be used to calculate similar nesting patterns.

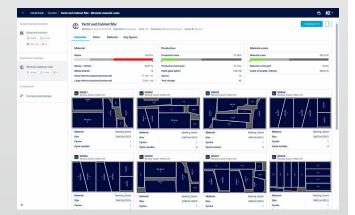
## All important settings can be configured in intelliDivide and saved and reused under various profiles:

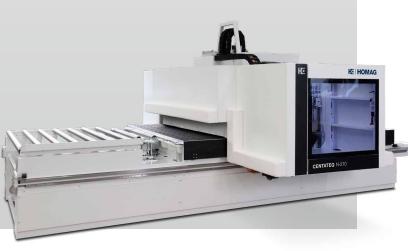
- Parts clearance
- Rotation angle
- Do not place small parts on the edge
- Calculate similar nests (extended computing time)

#### Additional nesting functions are available in conjunction with the woodWOP nesting plugin (from woodWOP 8):

- "Stay down" (repositioning without retraction) and "Common line" (common trimming track)
- Trimming in steps
- Positioning bars (from woodWOP 8.1)

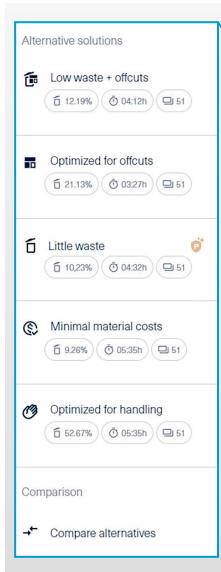
Name* Stay down +	Tabs			
Nesting	Formatting	Program	Variables	
Minimum parts o 12.0	clearance*	mm	Extended computing time	
Angle 90		•	Display zero points	
Fixing distance* 15.0		mm	Do not place small parts on the ed	ige
			Maximum parts surface* 0.10	m²
			Minimum edge clearance* 300.0	mm

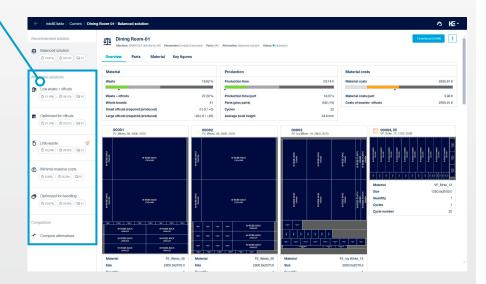




## Using the results

Cutting patterns and alternative solutions





#### For saws: intelliDivide Cutting

intelliDivide Cutting simultaneously calculates several solutions for the saw and makes them available for selection – e.g. optimized based on waste, short machine running time, easy handling, lowest material costs and much more.

- Select the right solution for your current application and transfer it directly to the saw as a SAW file.
- If you are not using a HOMAG saw, a PTX file is available for download. Many saws from other machine manufacturers on the market can import this format.

## For CNC nesting machines: intelliDivide Nesting

During nesting, intelliDivide calculates alternative solutions, primarily when using plus parts (e.g. if you want to pre-produce parts in a specific material that do not belong to the current job).

 Select the right solution for your current application, download the associated MPR(X) file and save it in the working folder of the CNC machine.

ecommended solution	Compare alternat	ves				ton			
Balanced solution		Balanced solution	Optimized for offcuts	Minimal material costs	Optimized for handling	Minimum waste			
	Material								
	Waste	11.40.95	21.13%	9.63 %	38.30 %	8.62 %			
ernative solutions	Waste + offcuts	32.98 %	37.19%	32.98 %	66.39 %	34.34 %			
Optimized for offcuts	Whole boards	61	61	61	62	52			
( <u>6</u> 21.19%)( <u>0</u> 0327h)( <u>0</u> 61)	Small offcuts (required/produced)	*13 (-0 / *13)	+10 (-0 / +10)	+17 (-0 / +17)	+17 (-0 / +17)	+15 (-0 / +15)			
Minimal material costs	Large offcuts (required/produced)	+20 (-0 / +20)	+12 (-0 / +12)	+17 (-0 / +17)	+22 (-0 / +22)	+23 (-0 / +23)			
( <b>5</b> 9636) ( <b>0</b> 01376) ( <b>3</b> 61)	Production								
	Production time	02:56 h	03:27 h	04.47 h	05:10 h	06:33 h			
Detimized for handling	Production time/part	16.34 s	19.24 s	26.73 s	28.8 s	36.57 s			
	Parts (plus parts)	645 (+0)	645 (+0)	645 (+0)	645 (+0)	645 (+0)			
Minimum waste	Cycles	19	24	40	43	49			
(B 852%) (D 96228) (D 52)	Average book height	40.1 mm	31.8 mm	19.1 mm	18.2 mm	15.9 mm			
	Presence at the machine	01:55 h	02:30 h	01:59 h	01:13 h	02:26 h			
mparison	Material costs								
Compare alternatives	Material costs	2562.51.6	2628.93 €	2504.27 €	2559.42€	2538.62.€			
	Material costs/part	3.97.6	4.07 C	3.88 C	3.96.6	3.93 6			
	Costs of boards+ offcuts	2562.51 €	2628.93 C	2504.27 €	2559.42€	2538.62 €			

#### **Comparing** alternatives

The "Compare alternatives" function displays all results in a table.

- Green key figure: This solution provides the best result compared to the others.
- Red key figure: The solution has the worst value compared to the others.

## Calculating panel and edge requirements

intelliDivide calculates the total material requirement and displays it in the material overview:

- Required panels
- Required offcuts and generated offcuts
- Required edge material
- Storage location of the panels and edges

In addition, the entire cutting pattern overview – including the material overview – can be downloaded as a PDF document.

Balanced solution		ning Monole Tape Longs and Dav	stee Spinzeine	Pate 21 Alternative	(Internet solution	Speak & Colima	ed.			
	Required boards									0
lismative solutions										-
Optimized for handling	Material code	Board code	Type	Length (mm)	Width (ner	1	Thickness (nm)	Demond		
6 m.4m. 6 m.m. (B.)	P2_Gold Oraft Oak_19	P2_Gold Orsh Osk_19	invertory	2500,0	2070.0		190	1		
Little waste	P2_Woles_08	P2_Wells_08_2900_20.	Inventory	2800.0	2070.0		8.0	4		
6 13 LTS () 00 100 ( Da 4	P2_Wittin_19	P2_Weise_19_2000_20.	inventory	0.0083	2070.0		19.0	2		
	Officute created									0
omparison										
Compare alternatives	Material code	Long	th (mm)			Width (mm)			Quantity	
	P2_Gold Craft Oak_19	:997.4				971.7			1	
	P2_W06ss_08	2070.0				807.6			1	
	P2_Wess_19	607.2				580.0			£	
	P2, Weess, 19	2070.0				1615.4			Ť.	
	Edgebanda									
	Edge code	Height (mm)	Thickness (r	mm) Dom	and (m)					
	ABS_Exche_1.3,23_HM	230	130	11.76						
	PP Wess 1.3 22 HM	22.0	1.30	26.24						

#### **Using material efficiently**

intelliDivide provides you with an overview of the material usage of the optimizations transferred over the past year using various diagrams. Use this valuable information to analyze and improve your material usage:

- Most frequently used materials
- Increase/decrease in offcuts
- Material usage: How many panels/offcuts were used and how many parts, offcuts or waste parts were created?

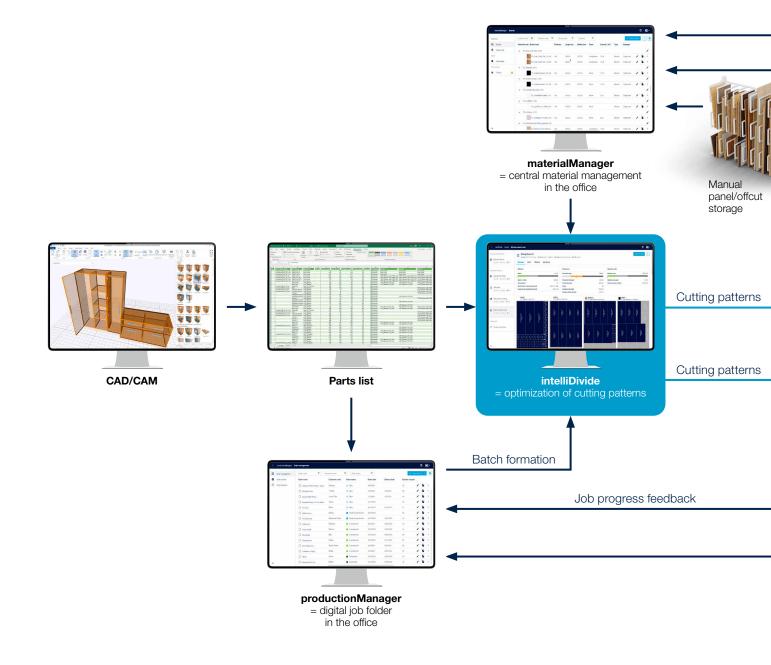
**Objective:** Increase the efficiency and sustainability of panel material during cutting.



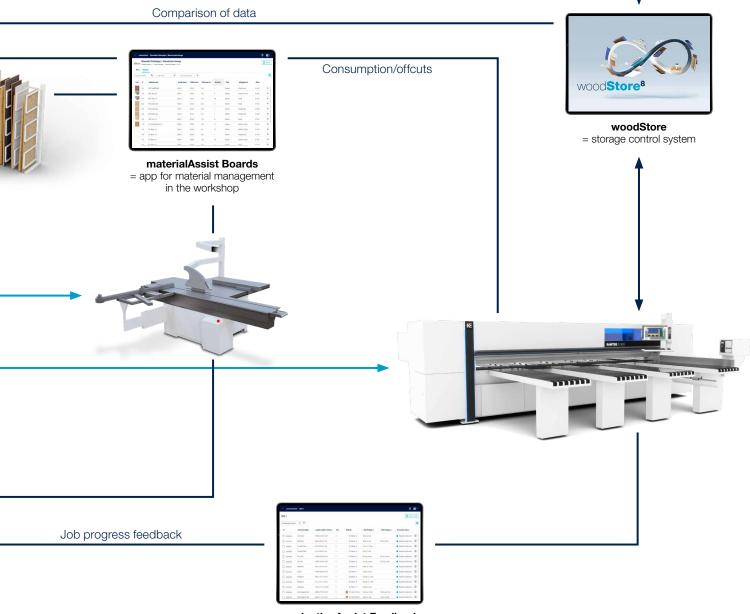
## **intelliDivide** Interaction with the HOMAG apps

With intelliDivide, you create a building block to make your production process more digital step by step. You can use the optimization solution as stand-alone software and then expand it on a modular basis with additional apps from the HOMAG portfolio if required. All applications communicate seamlessly with each other, so you can gradually make your data flow consistent.









productionAssist Feedback = app for feedback on processing in the workshop

## **intelliDivide grows with you** Solutions for dividing panel material





#### **Cutting Production Set**

- Our cutting assistant supports you in optimizing your cutting patterns with intelliDivide, in the cutting process and in labeling the parts at your manual saw.
- Optimize your cutting patterns simply by clicking and transferring them to the app on your tablet in the workshop. There, you can work through the cutting pattern using a clear overview in the app – and print an individual label for each part.



#### Panel dividing saw

- intelliDivide automatically adopts all the essential settings of the HOMAG panel dividing saw.
- You can start optimizing cutting patterns in intelliDivide with just a few clicks.
- You can transfer the cutting patterns of your choice directly from the software to the saw.
- For third-party machines, the cutting patterns can be downloaded in PTX format.





#### Saw/nesting combined with storage

- The woodStore storage control software is used in a storage system.
- intelliDivide uses the HOMAG materialManager (central material management) as a board library.
- Thanks to a suitable interface, the panels and offcuts that you manage in woodStore are available directly in materialManager and in intelliDivide.
- Changes that you make in woodStore are synchronized in materialManager.

#### **Nesting CNC**

- Ideal nesting solution for HOMAG CNC machines: intelliDivide calculates patterns for rectangular parts as well as for free-formed parts.
- Additional nesting functions are available in conjunction with the woodWOP 8 nesting plugin: "Stay down" (repositioning without retraction), "Common line"
   (common trimming track) and "Positioning bars."
- Our nesting assistant (Nesting Production Set) helps you to quickly and easily label components after nesting.

## Complete networking

Interfaces and automation

#### **HOMAG File Agent**

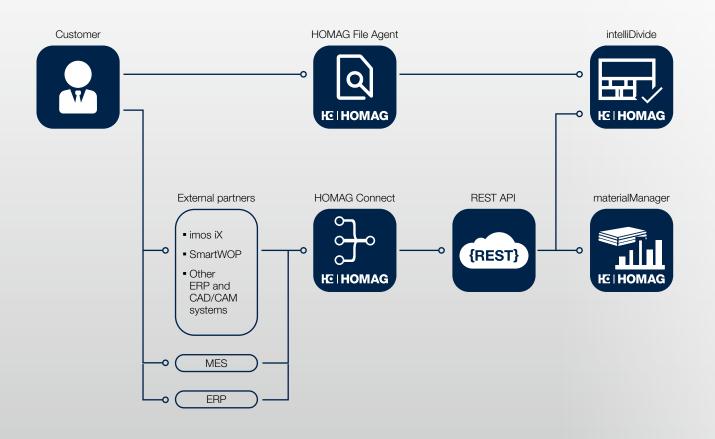
## Automated data exchange between intelliDivide and work preparation

- The HOMAG File Agent is software that HOMAG provides free of charge if your machine only offers limited or no connectivity, or if no coordinated interface to your software is available in work preparation.
- With the HOMAG File Agent, you can easily import parts lists. If desired, the data exchange between work preparation/machine and intelliDivide can also be started automatically for optimization.
- The HOMAG File Agent monitors configured network drives or local directories and automatically processes the files stored in them.

#### **API interface**

#### The remote control of intelliDivide

- This interface enables customers or external software companies to commission intelliDivide as a web service via a REST API and to retrieve results.
- An authorization key is required to access the API.
- The following CAD/CAM and ERP systems already offer the interface to intelliDivide: Borm, imos iX, SmartCabinet, SmartWOP, SWOOD.



## Licensing

You purchase a company license for intelliDivide.

This means that you only book the app once and can add as many users as you like.

	intelliDivide Cutting Classic	intelliDivide Cutting Advanced	intelliDivide Cutting Premium	intelliDivide Nesting Classic	intelliDivide Nesting Advanced
Number of compo- nents per month	2,500*	10,000*	100,000*	2,500*	10,000*
Number of standard fields for parts list	12	12	12	12	12
Number of additional fields for further information	21 (fixed)	99 (individual)	99 (individual)	21 (fixed)	99 (individual)
Additional functions included	Included in the Cutting Production Set • intelliDivide Cutting Classic • materialManager • materialAssist Boards • productionAssist Cutting	<ul> <li>API interface</li> <li>Material statistics</li> <li>Material-dependent parameters</li> </ul>	<ul> <li>API interface</li> <li>Twice as many alternatives thanks to extended computing time</li> <li>Optimization based on time</li> <li>Material statistics</li> <li>Material-dependent parameters</li> </ul>	Included in the Nesting Production Set • intelliDivide Nesting Classic • materialManager • materialAssist Boards • productionAssist Nesting	<ul> <li>API interface</li> <li>Similar nesting patterns due to extended computing time</li> <li>Material statistics</li> </ul>

\*Additional parts packages can be easily booked in the tapio shop retrospectively.

## **Technical data**

You can use intelliDivide directly in the Internet browser on any number of PCs or laptops. This means you do not have to waste time and effort installing software. What's more, it means that the application is always automatically up to date.

Use	Web app/browser application for use on a PC or laptop. HOMAG saws are supported from version CADmatic 3.
Browser	We recommend: Microsoft Edge, Google Chrome or Apple Safari
Internet access (DSL, UTMS, LTE)	At least 5 Mbit/recommended 50 Mbit
Logging in	Via tapio login (tapio account required) Registration at: www.tapio.one





countries!

Video series "Digital overview with



## Apps and digital assistants

### Quick and easy support in your machine environment.

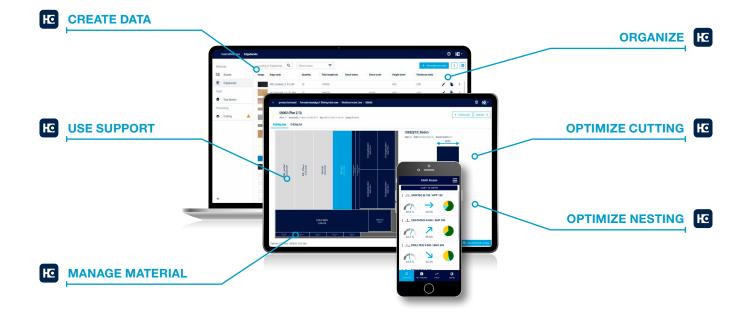
Some people still use pen and paper to create their cutting patterns. But they look at their smartphone if they want to know what the weather is like – instead of looking out of the window. We asked ourselves: why not combine the best of both? Our apps and digital solutions make your everyday work easier: machines, material, tools, cutting patterns, components – you always have everything in your pocket or on your desk.

#### **EXCERPTS FROM YOUR FEEDBACK:**

- Are there simple solutions that can eliminate various obstacles in my day-to-day work (e.g. when organizing materials or sorting parts)?
- Is there a way to slowly approach using digital assistants?
- Which tools can you try out simply and easily without having to invest huge sums of money straight away?

#### **OUR ANSWER? SMART AND POWERFUL SOLUTIONS:**

- ✓ Always low investment
- ✓ Always up to date (no updates necessary)
- ✓ Always easy to use (no complex software)
- ✓ Always helpful



#### THE ADVANTAGES AT A GLANCE

- No investment, update or maintenance costs
   Low starting price, no unplanned financial expense
- Licenses are independent of the user
   Any number of employees can use the application without
   incurring additional costs
- Independent of hardware and operating system
   Can be used anywhere, anytime
- Open system import possible from almost all systems (ERP, industry software, CAD/CAM, Excel, CSV) No obligation to use specific software systems
- Simple, smart operation Minimal training required
- More efficient production
   Jobs completed more quickly, more safely and in higher quality



More information at digital.homag.com



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YOUR SOLUTION