



PERFECT PROTECTIVE PACKAGING

PRODUKTIVITÄT TRIFFT NACHHALTIGKEIT:

**WIE DIE TRANSFORMATION ZUM
VOLLAUTOMATISIERTEN
SCHUTZVERPACKUNGSPROZESS GELINGT**

DIE SPEAKER



Michael Schumacher

Packaging Logistics Manager
Storopack



Maik Hübsch

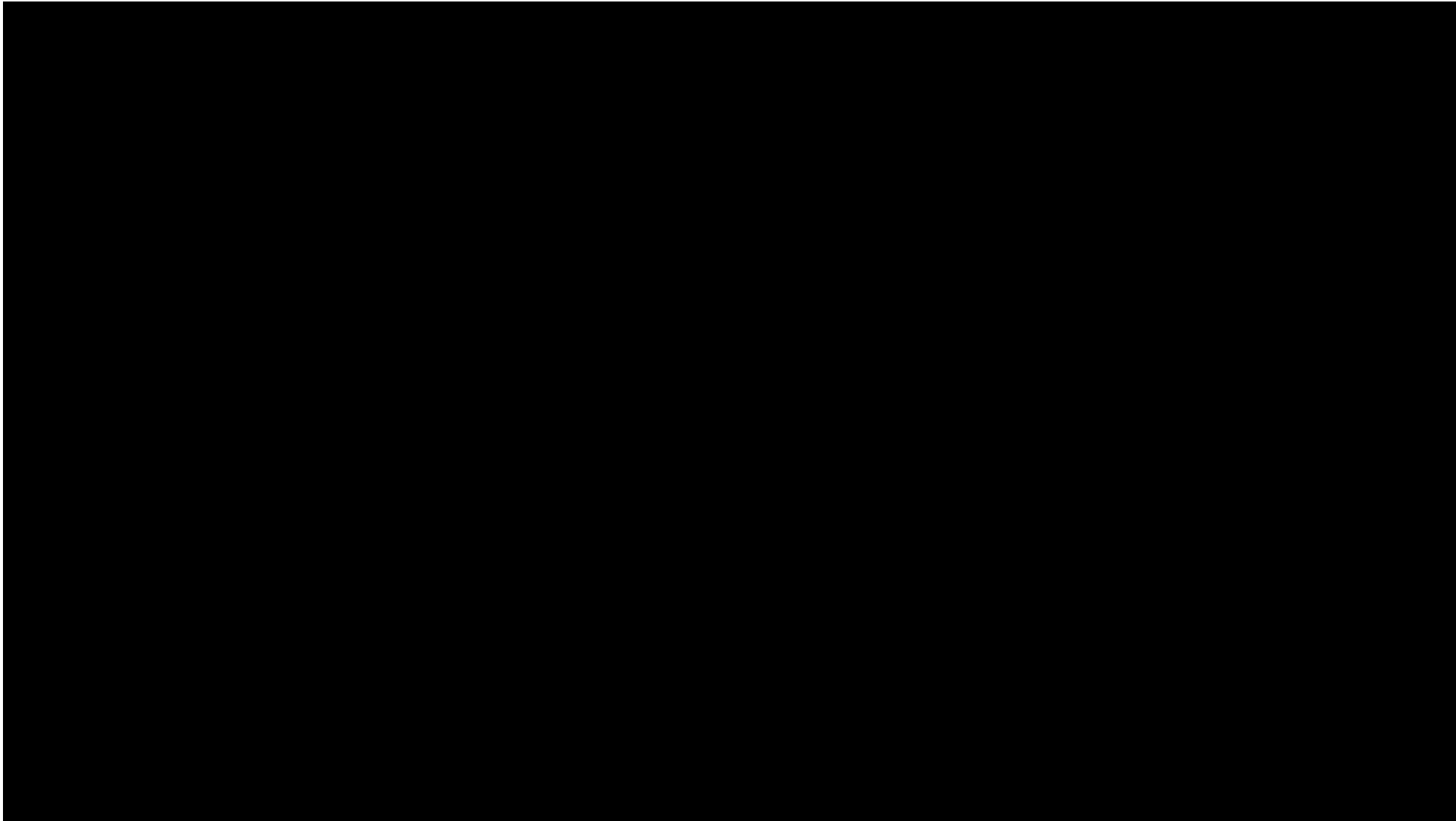
Product Specialist
AIRplus® & PAPERplus®
Storopack

DER MANUELLE PACKPROZESS

KOSTENVERTEILUNG BEIM PACKPROZESS



DER MANUELLE PACKPROZESS MIT LUFT- UND PAPIERPOLSTERN



MANUELLES PACKEN

- ▶ Nur ein Arbeitsplatz
- ▶ Lange Laufwege
- ▶ Viele Zwischenschritte von der Verpackung bis zur Endverpackung



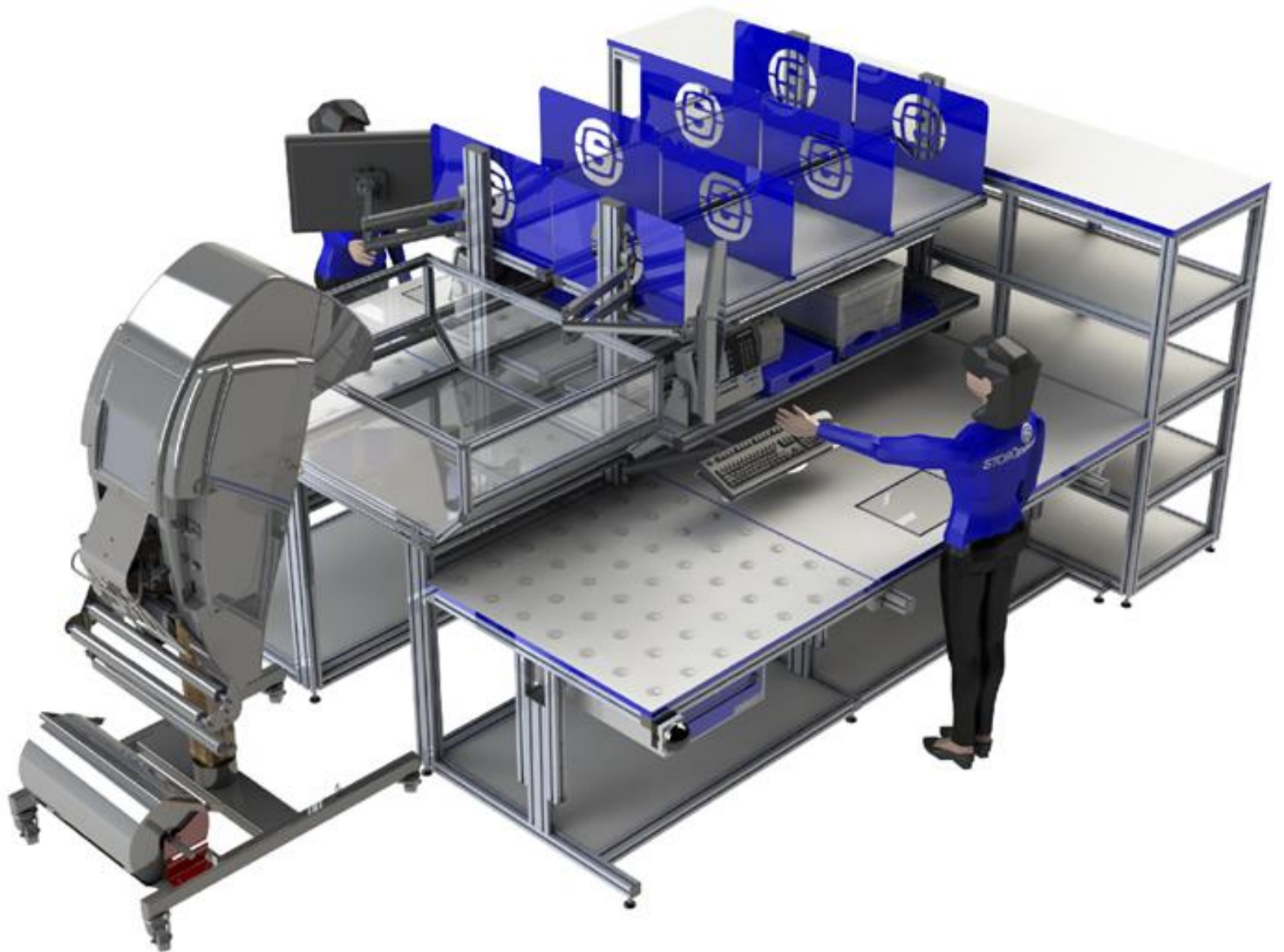
MÖGLICHE HERAUSFORDERUNGEN

- ▶ Workflow-Prozess
- ▶ Individuelle Lösung im Versand



LÖSUNG

- ▶ Individuelle Lösung
- ▶ Viele Extras
- ▶ Kundenwünsche



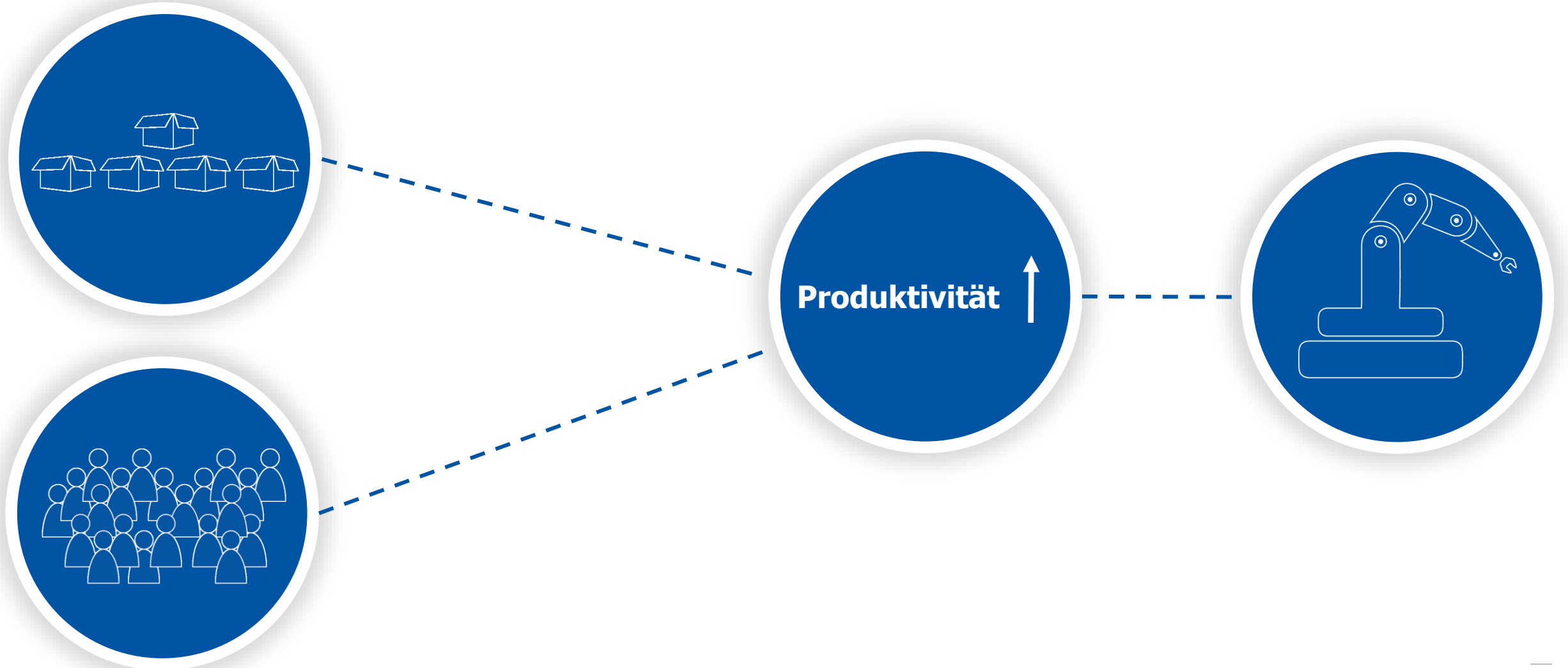
LÖSUNG

- ▶ Maßgeschneiderte Lösung
- ▶ Arbeitsablauf kompatibel
- ▶ Mitarbeiter bleibt permanent am Packplatz
- ▶ Weniger Produktbewegungen
- ▶ Ergonomisches Arbeiten
- ▶ Modular erweiterbare Packplätze



HERAUSFORDERUNGEN

BESTEHENDE HERAUSFORDERUNGEN UND IHRE LÖSUNG



HOHLRÄUME FÜLLEN IM DETAIL

HOHLRAUMFÜLLUNG IM DETAIL

BOTTOM-FILL



HOHLRAUMFÜLLUNG IM DETAIL

TOP-FILL



Perfect

DE	Schreibpapier	DA	Trykkløst	NO	Hurttrykkløst
EN	Pre-inked copier	EL	Χηρμα ακριβής	PL	Szyklowar
FR	Autocopieur	FJ	Papierföör	PT	Papel de cópiado
ES	Oficina copias	HR	Papir	RU	Сопляпаша
IT	Permalta a piala	HR	Brat papir	SK	Papier prekopio
ZH	快影機上力力	JA	印力機	SI	Lepel na papir
BG	Тополно протопаша	KO	인력기	SV	Tryckpapper
CZ	Triskový papir	NL	Schryflopapier	TR	Hızlı papirler kopyalama

HOHLRAUMFÜLLUNG IM DETAIL

VOID-FILL



VOLLAUTOMATISIERT
SCHÜTZEN UND POLSTERN

VOLLAUTOMATISIERT SCHÜTZEN UND POLSTERN

Portalsystem



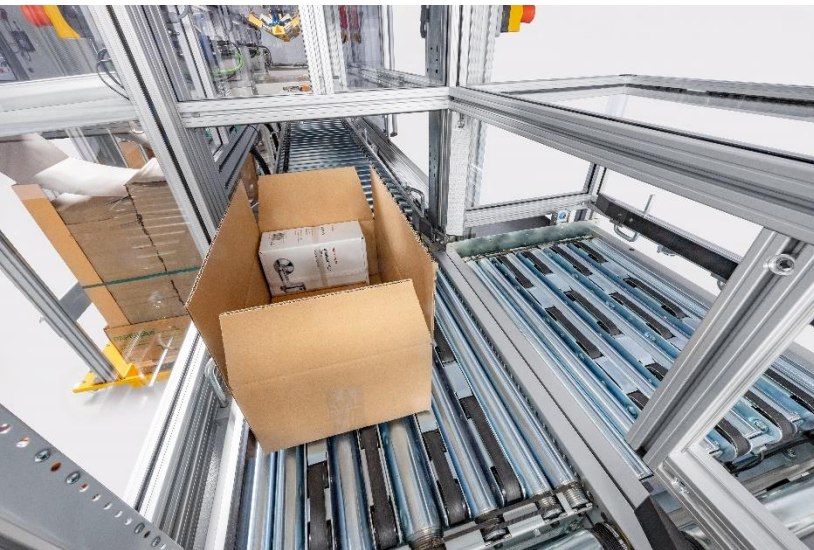
Gelenkroboter





HOHLRAUMFÜLLUNG IM DETAIL

VOLLAUTOMATISIERT SCHÜTZEN UND POLSTERN - PORTAL SYSTEM



VOLLAUTOMATISIERT SCHÜTZEN UND POLSTERN - GELENKROBOTER MIT PAPIERPOLSTERN





VOLLAUTOMATISIERT SCHÜTZEN UND POLSTERN – GELENKROBOTER MIT LUFTLÖSTERN

PAPIER- UND LUFTPOLSTER
„WAS IST WIRKLICH
NACHHALTIG?“

PAPIERPOLSTER VS. LUFTPOLSTER

- ▶ Innovativ: optimale Polsterwirkung bei niedrigem Materialverbrauch und geringem Gewicht





- ▶ Zertifiziert: TÜV Austria und RecyClass
- ▶ Weniger CO₂




PACKMITTELANALYSE - PCA

ENTWICKLUNG IST, PROZESSE NEU ZU DENKEN.

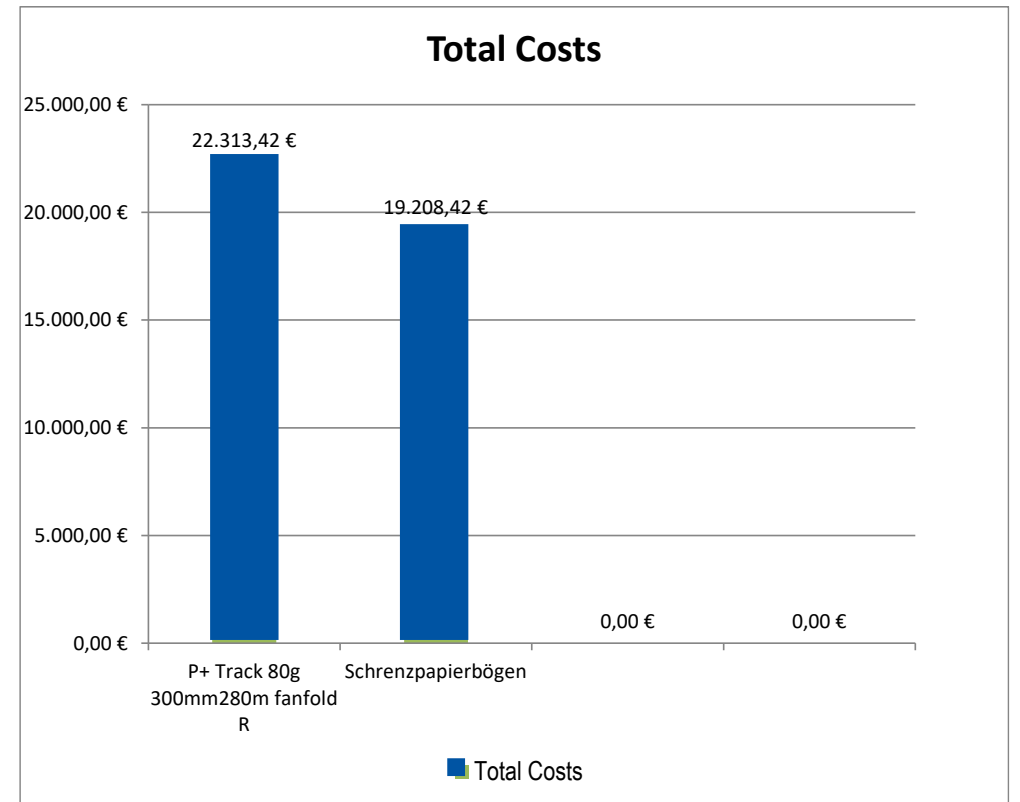






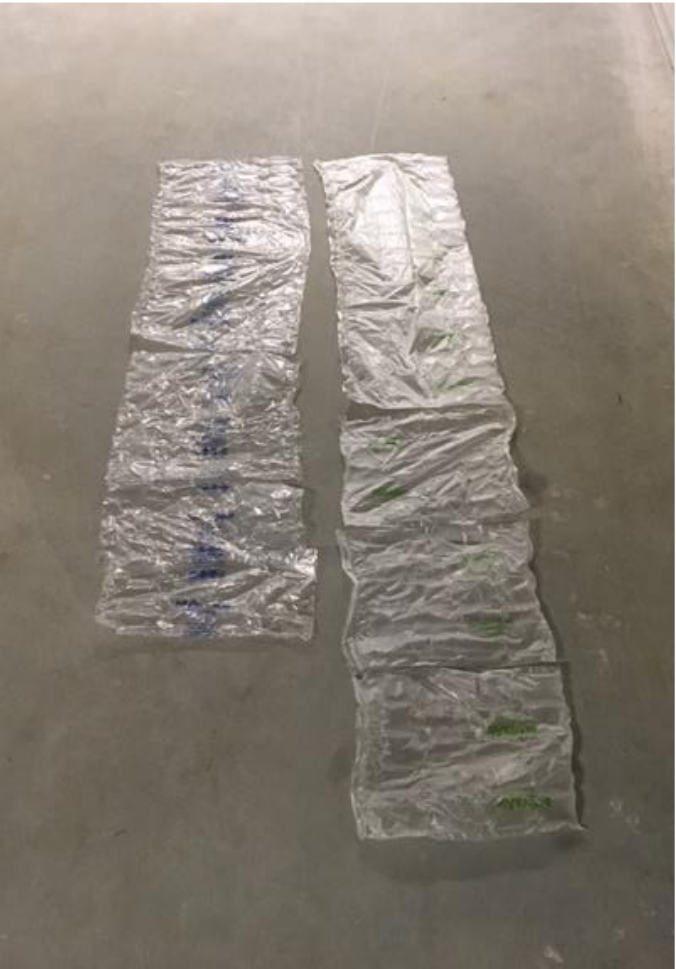
Project Information	
Client/Project:	LKG
Opportunity #:	148523
Project Manager Client:	[REDACTED]
Distributor:	Storopack
Distributor Rep. Name:	Annett Wysocka
Project Manager Storopack:	Maik Hübsch
Packing Area:	Versand

Customer Information			
Hourly Benefit / Employee	15,00 €	Yearly Costs / Stocked Pallet	95,00 €
Forklift Costs / Year	8.500,00 €	Time Storing a Pallet (min)	4
Disposal Tax for Paper (€ / kg)	0,16 €	Disposal Tax for Plastic (€ / kg)	0,96 €
Shipped Box per Year	50000	Shipments per Year	2



Pack Out Analysis																
Box No.	Quantity (Year)	PAPERplus® Track				Unbekann								Comment		
		Time to Pack (sec)	Number of Pads	Length Pad (m)	Cost per Box	Time to Pack (sec)	Number of Pads	Length Pad (m)	Cost per Box	Savings	Time to Pack (sec)	Number of Pads	Length Pad (m)		Cost per Box	Savings
1	1	1,0	1,0	4,36	0,75	5,0	-	8,00	0,21	-0,54	-	-	-	-	-	PP1
2	1	1,0	1,0	2,45	0,42	5,0	-	3,00	0,09	-0,33	-	-	-	-	-	PP1
3	1	1,0	1,0	0,98	0,17	5,0	-	1,30	0,05	-0,12	-	-	-	-	-	DK8
4	1	1,0	1,0	0,98	0,17	5,0	-	1,30	0,05	-0,12	-	-	-	-	-	DK8
5	1	1,0	1,0	1,54	0,27	5,0	-	2,50	0,08	-0,19	-	-	-	-	-	DK6
6	1	1,0	1,0	1,54	0,27	5,0	-	3,00	0,09	-0,18	-	-	-	-	-	DK18
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ø		1,00	1,0	1,98	0,34 €	5,00		3,18	0,10 €	-0,25 €						

VERGLEICHSTEST STOROPACK AIRplus® VS. MARKTBEGLEITER



VERGLEICHSTEST
STOROPACK PAPERplus® VS. MARKTBEGLEITER



LIFE CYCLE ASSESSMENT - LCA



Carbon Footprints berechnen



LIFE CYCLE ASSESSMENT

Description	Parameters		
LCA of: A+ Void 200x120mm A+ Void 200x1200mm 50%R A+ Void 200x120mm 100%R	Date	28.04.2023	
	Customer		

Results of the comparative Life Cycle Analysis

A+ Void 200x120mm (#530616): 100 Meter

Impact categories	Climate change
Unit	kg CO2 eq
A+ v-film 20my 200mmx1125m120mm	2,423

A+ Void 200x120mm 50%R (#520128): 100 Meter

Impact categories	Climate change
Unit	kg CO2 eq
A+ v-film 20my 200mmx1125m120mm R	2,127

A+ Void 200x120mm 100%R (#533023): 100 Meter

Impact categories	Climate change
Unit	kg CO2 eq
A+ v 25my 200mmx900m120mm 100%R	0* (2,330)

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LIFE CYCLE ASSESSMENT

Information
Transport to customer is not considered.
* CO ₂ -Emissions of the 100%R films are compensated by STOROpack as of January 1 st 2023. (LINK)
The results come from Life Cycle Assessment tool EcoPack (v2.2) developed by Storopack for the evaluation of the environmental impact of protective packaging products.

The current Life Cycle Assessment (LCA) results are obtained from the Storopack LCA tool.

This tool allows to perform streamlined Life Cycle Assessment according to the ISO 14044 standard recommendations.

Goal and Scope:

This LCA aims both at:

- evaluating the environmental performance of Storopack products (throughout the product lifecycle steps: from raw material extraction to product end-of-life through production process, packaging, logistics and use),
- and at comparing different Storopack offer propositions ("Proposal").



Life Cycle Impact Assessment method:

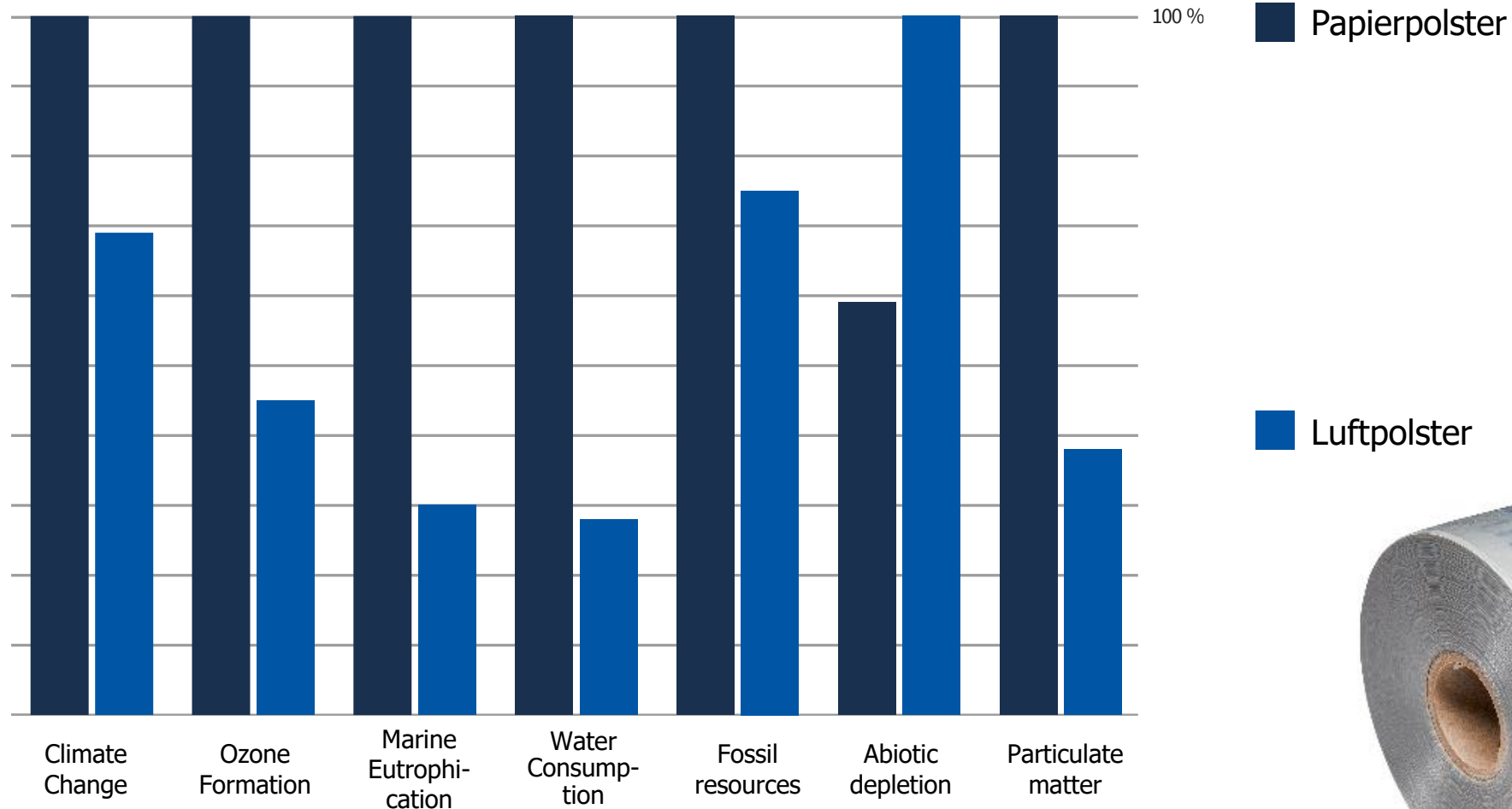
Different impact categories are studied. Only the highlighted ones are used in the simplified version of the method, based on the most significant impacts for protective packaging products.

Indicator	Unit	Method	Concern
Climate Change	Kg CO ₂ eq	IPCC 2013 100a method	Climate change could lead to mayor changes in temperature, sea level, or ice melt
Photochemical ozone formation	Kg NMVOC eq	LOTOS-EUROS (Van Zelm et al, 2008) as applied in ReCIpe	Smog phenomenon and human health impacts
Eutrophication marine	Kg N eq	EUTREND model (Struijs et al, 2009b) as implemented in ReCIpe	Degradation of ecosystem health and biodiversity
Water consumption	m3 depriv.	Model for water consumption as in Swiss Ecoscarcity (Frischknecht et al, 2008)	Water scarcity
Fossil resources	MJ	CML 2002 (Guinée et al., 2002)	Consumption of oil, gas, coal (as fuel or as resource for material manufacturing)
Mineral depletion	Kg Sb eq	CML 2002 (Guinée et al., 2002)	Depletion of mineral resources (metals, rare earths, etc.)
Particulate matter	Kg PM2.5 eq	RiskPoll model (Rabl and Spadaro, 2004) and Greco et al 2007	Fine particles emitted directly into the atmosphere or resulting from emissions

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LUFTPOLSTER VS. PAPIERPOLSTER

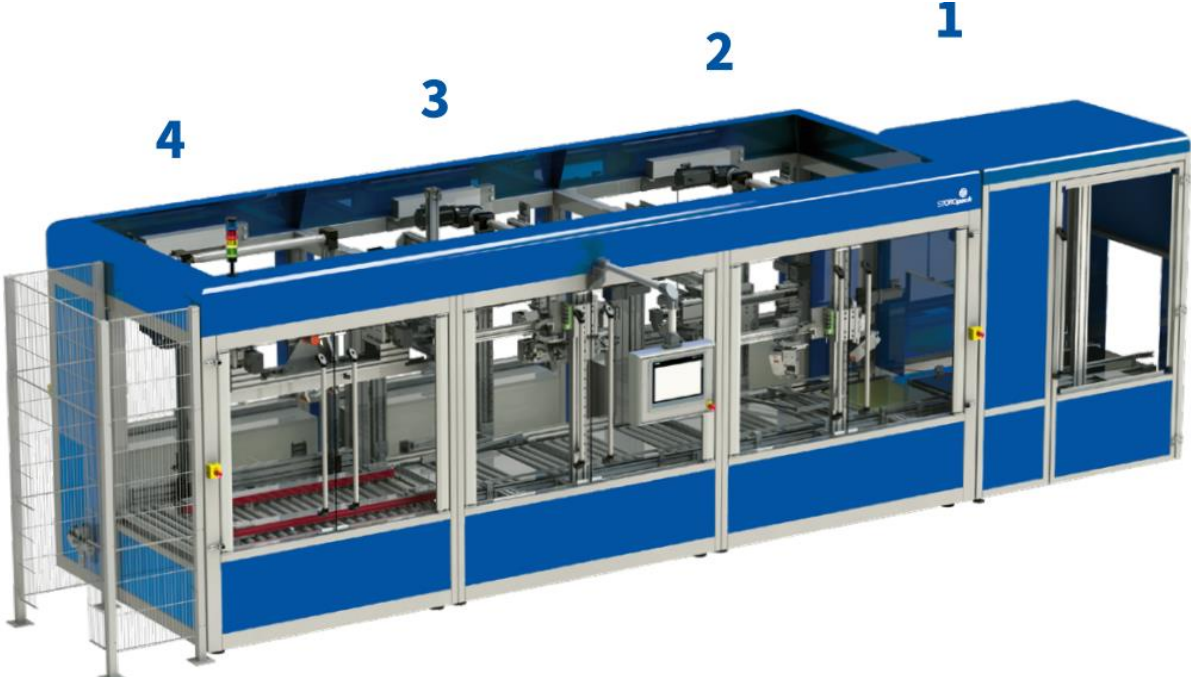


**NOCH NACHHALTIGER IST,
WENN GAR KEIN HOHLRAUM
EXISTIERT**



HOHLRAUMFÜLLUNG IM DETAIL

VOLUMENREDUZIERUNG KOMBINIERT MIT HOHLRAUMFÜLLUNG



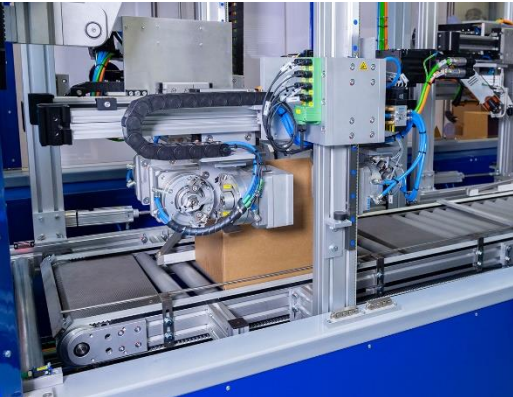
1



2



3



4



RON

VERDECKLER

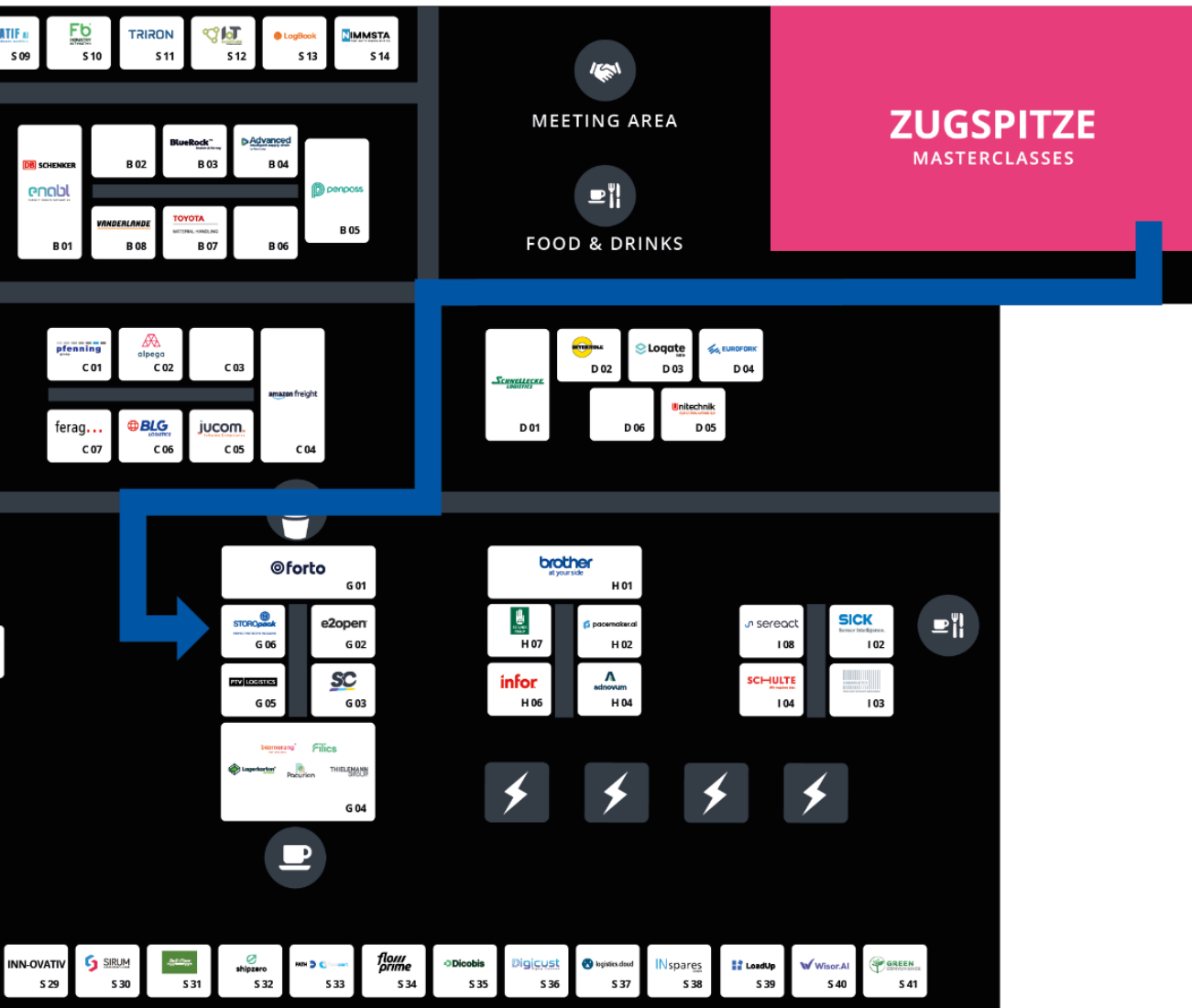


KOMBINATION AUTO.PROTECT MIT AUTO.MINIMIZE



ZUSAMMENFASSUNG / FAZIT

SIE MÖCHTEN MEHR WISSEN? HIER GEHT'S ZU UNSEREM STAND



ODER KONTAKTIEREN SIE UNS DIREKT:



Michael Schumacher



Maik Hübsch





PERFECT PROTECTIVE PACKAGING