

Universal guidance and control technology for transplanting implements and associated machines

Transplanting



WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
TOPCON?

Table of contents

Navigate sections by clicking the buttons below.



[WHY
TRANSPLANT](#)

[THE
TECHNOLOGY](#)

[APPLICATIONS](#)

[WHY
TOPCON?](#)



TRANSPLANTING

Why Topcon transplanting

Inputs are skyrocketing and margins are squeezing. Specialty farmers need a turnkey solution that reduces labor, boosts efficiency and increases production.

GNSS-based guidance, autosteering and control has been proven through countless industries and applications. Because of price, frequency and labor prevalence, industry adoption tends to trail. Transplanting, post hole digging and soil sampling operations can benefit immensely from this now affordable technology.



WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

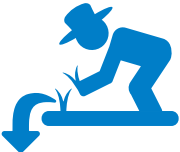
WHY
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Reduce inputs and reallocate manual labor with GNSS

Due to the relative infrequency of transplanting coupled with labor prevalence in temperate areas in which associated crops are grown, manual measurement is still common practice.

With margins tightening and inputs ever-increasing farmers need a turnkey solution. Proven through widespread commodity crop adoption, not to mention nearly every progressive machine-based industry in the world, GNSS guidance, autosteering and control is the next logical step for transplanting farmers.

Not only does the solution reduce manual labor required to physically outline fields, it provides streamlined setup through an easy-to-use task planning interface, further improving efficiency. Users can also expect reductions in fuel and the input transplanted through the reliability of GNSS offering fewer mistakes and corrections. Lastly, reallocate the manual labor for other tasks.

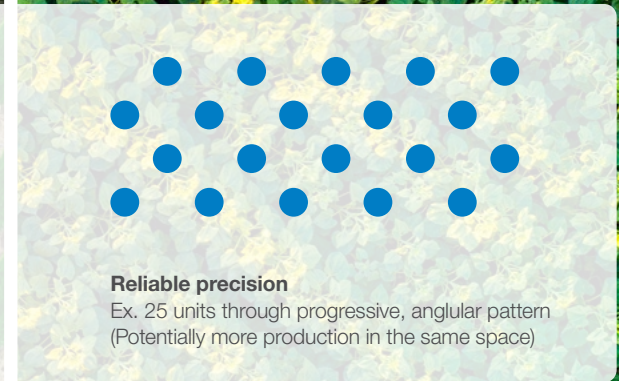
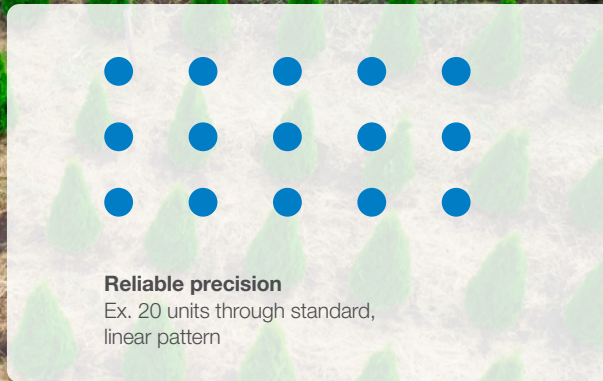
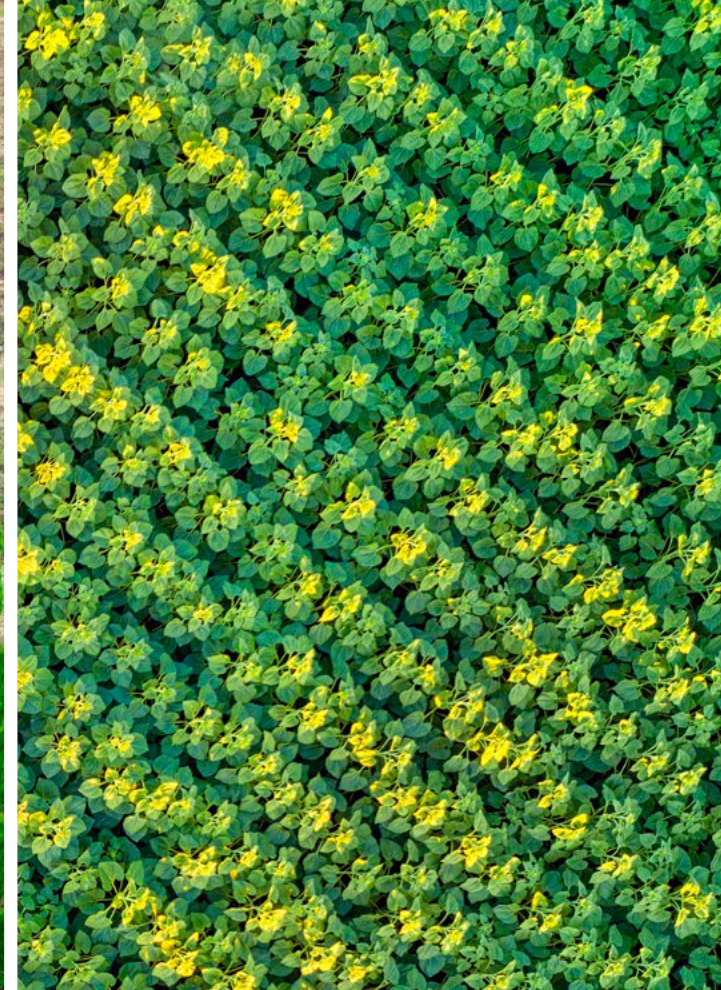


Reduce labor with GNSS



Reallocate manual labor





Increase production through precision

GNSS-based guidance and control allows for more elaborate planting patterns, which can increase actual crop population by up to 15%, if not more. In addition, more uniform transplanting executed through GNSS generates a healthier crop for increased production and quality.

Crops placed in an optimized space maximize available resources (i.e., soil nutrients, water, sunlight) with less competition. In addition, crops placed in patterns can have more angles accessible for potential maintenance (e.g., cleaning/weeding), further improving output.

System components overview



WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
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Guidance

The Topcon solution leverages a 20-year legacy in proven and increasingly affordable GNSS-based guidance and autosteering technology.



Control System

Universal ISOBUS-based controller for wide range of transplanting applications and scenarios.



Transplanting Solutions

Topcon offers 3 Transplanting options – Hydraulic on the Go, Manually on the Go or Stop and Go. The software runs in UT at every standard ISOBUS console with NMEA2000 and Rapid Update.



GNSS guidance technology used for high accuracy construction applications



Proven GNSS guidance

The Topcon solution leverages a 20-year legacy in proven and increasingly affordable GNSS-based guidance and autosteering technology. Tedious, labor-intensive manual measurements are replaced by highly accurate precision planning and placement.

Small measurement errors have significant consequences. High-accuracy positioning (i.e., 2 cm RTK) is required.



Featuring

High-accuracy guidance (2 cm RTK)

Universal compatibility via ISOBUS protocol (Topcon or 3rd Party)

Easy-to-use planning tools and interface

Complementary Topcon solutions

Modularity to transfer across machines

WHY
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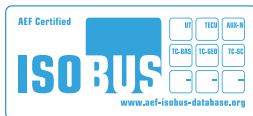
THE
TECHNOLOGY

APPLICATIONS

WHY
TOPCON?



Reliable control technology



Universal ISOBUS-based controller for wide range of transplanting applications and scenarios.

Developed under ISOBUS protocol for implement and technology flexibility.

Featuring

Easy-to-use interface

Universal implement and technology compatibility (ISOBUS)

Weatherproof (IP69K rating)

Complementary Topcon solutions

Key functionality through three operating modes:

- a) Stop and go
- b) Manual on the go
- c) Automatic/hydraulic on the go

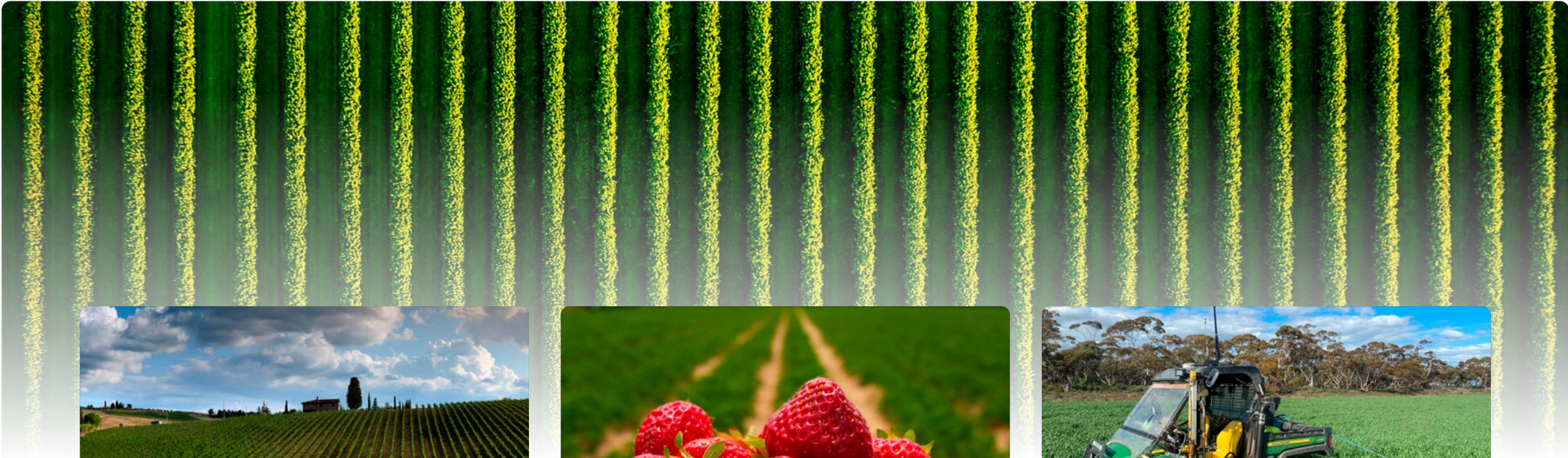
WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

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Suited for many transplanted crops and applications



Permanent and Perennial

Christmas trees, cherry trees, olive trees, vines, nuts, etc.



Annuals

Strawberries, rice, lettuce, etc.



Niche (e.g. Soil Sampling)

Soil sampling, post-hole digging, etc.

WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
TOPCON?

Use cases



**Topcon or 3rd Party
ISOBUS Guidance**



**Topcon ISOBUS
Implement Controller**



Christmas Trees



Cherry Trees



Strawberries



Lettuce



Post Hole Digging



Soil Sampling

WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
TOPCON?



Use case

Christmas tree transplanting in Germany



Efficiency Increased

Building plans within ISO-UT interface (i.e. directly in the console) versus physically marking and measuring sites on the field. Controlling the tree transplanting implement via an easy-to-use interface.



Production Increased

By planting in a tighter, angular pattern, increasing trees planted and better utilizing arable land.



4,486
transplanted trees



9 hours
(~500 trees per hour)



Use case

Strawberry transplanting in Germany



Efficiency Increased

Building plans within ISO-UT interface (i.e. directly in the console) versus physically marking and measuring sites on the field. Controlling the strawberry transplanting implement via an easy-to-use interface.



Production Increased

By transplanting more uniformly, reducing crop competition, boosting health and available harvest.



150,000
strawberry plants



20 cm
spacing between plants.



0.7 km/h
traveling speed



Use case

Soil sampling in Adelaide, Australia.



Efficiency Increased 30%

Building plans within ISO-UT interface (i.e. directly in the console) versus physically marking and measuring soil sites on the field. Controlling the soil sampler via an easy-to-use interface within a John Deere Gator UTV.



Quality Enhanced

Accurate georeferenced sample points provides the opportunity to capture better, more elaborate data to understand trends and application impacts over time.



45
samples



3 min
per sample



164
acres



2.5
hours



Trust Topcon

We are the ideal partner for developing advanced solutions for your positioning, agriculture and machine control challenges. Our experience, technical expertise, and overall company strength make us uniquely qualified to provide enhanced automation technology. Ultimately, this will drive your customers' productivity - and your market share - to ever-higher levels.

SPEED TO MARKET | GLOBAL NETWORK | EXPERIENCED OEM TEAM

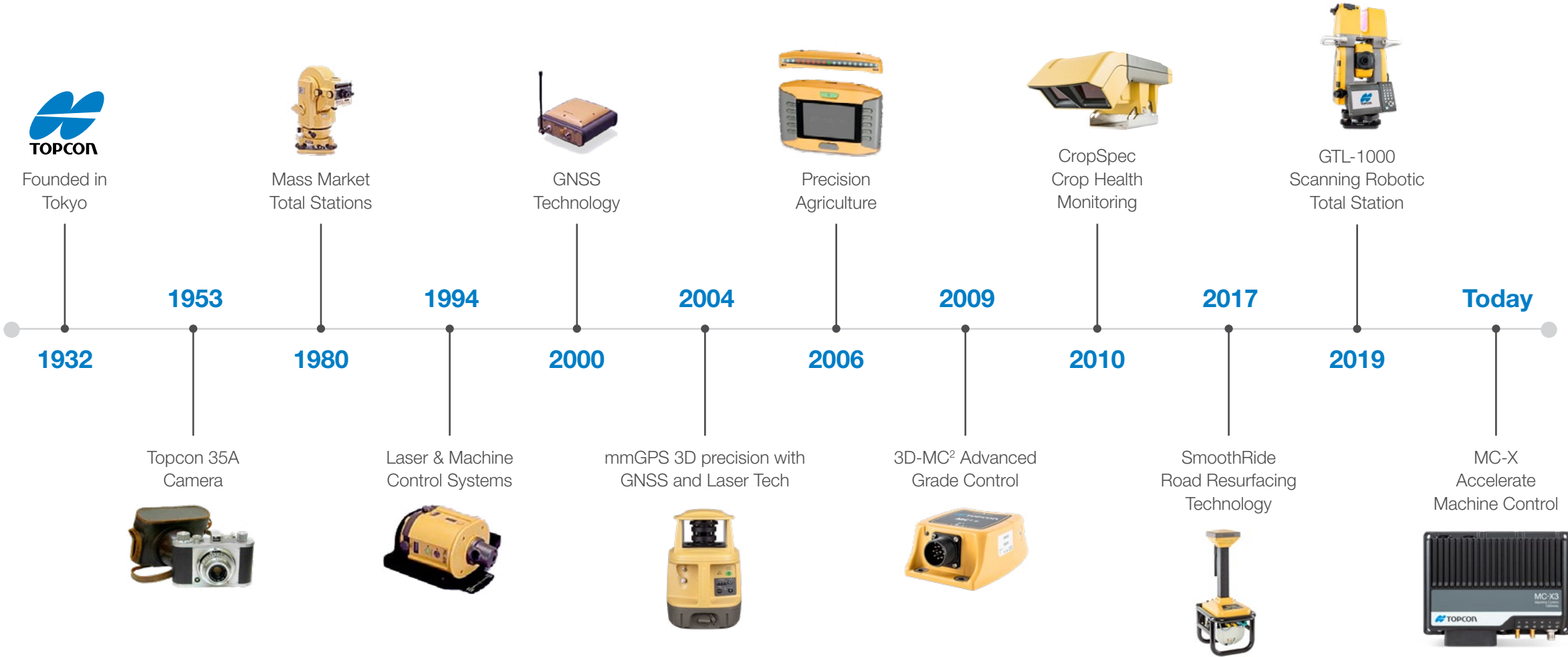
WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
TOPCON?

A History of Topcon Corporation



WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
TOPCON?

Trust Topcon to get you there faster with high-quality positioning and automation solutions tailored to your product strategy.

Independent solutions

In an industry with many contractual alliances, we remain independent. We have the freedom to develop technologies that best fit your unique goals. Our custom OEM solutions are all clean-sheet designs, providing more opportunities to differentiate your product from the competition.

Speed to market

Product development carries an inherent pressure to do everything faster and better than before, particularly since technology is only viewed as innovative if it arrives before the competition. Our experience helps simplify and shorten the design process, allowing you to go to market with your product faster – and with the utmost confidence.



Topcon Training Center,
Livermore, CA

Topcon Technology
Roadshow Truck

Topcon Positioning Systems Headquarters,
Livermore, CA

WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
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4900+ Employees | 2150+ Patents

WHY
TRANSPLANT

THE
TECHNOLOGY

APPLICATIONS

WHY
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Global Network

With an extensive worldwide network of corporate offices, R&D centers and technical groups, we have an unmatched capability to assist any manufacturer, no matter where they are located, with fully integrated machine automation solutions. This also positions us to create programs to assist and support dealer networks, directly or through extensive training programs.

Experienced OEM Team

Our experienced OEM team knows what questions need to be answered first and the potential pitfalls to be avoided along the way. Their first objective is to make sure our technology is the right fit for your application and be your partner every step of the way.



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