

InteliNano^{NT}



GEN-SET CONTROLLER



Benefits

- ▶ Supercompact and attractive design
- ▶ Integrated solution – less wiring and external components
- ▶ Standard industrial cutout dimensions
- ▶ The biggest graphical display in its class
- ▶ Language free, on display only symbols and numbers, no translation needed
- ▶ USB communication interface and CAN for outstanding support of EFI engines
- ▶ “Zero” power consumption mode, i.e. extended battery life
- ▶ Weak battery genset starting
- ▶ Event Log (10 events)
- ▶ Easy and user-friendly installation / operation
- ▶ Perfect price / performance ratio
- ▶ USB one cord programming

Description

InteliNano^{NT} is a cost effective diesel and gasoline generator set controller which offers outstanding protection, monitoring and control for small and middle size generator sets.

There are three different types available:

- ▶ MRS
- ▶ AMF
- ▶ PLUS

The InteliNano^{NT} MRS, AMF and PLUS boast large and powerful graphical displays.

All InteliNano^{NT} controllers communicate with license-free PC software via the integrated USB port for your convenience.

This software allows users to configure all the inputs, outputs and important parameters freely, as well as update the controller's firmware to suit individual requirements.

All InteliNano^{NT} controllers can communicate via standard and proprietary CAN J1939 communication protocols to a wide range of EFI engines, which include Caterpillar, Cummins, Detroit Diesel, Deutz, GM, Isuzu, Iveco, John Deere, Kubota, MAN, MTU, Perkins, Scania, Sisu, Volvo Penta, Yanmar and others.

- ▶ ComAp's uncompromised quality and performance
- ▶ MRS and AMF in one model, i.e. one stock only
- ▶ High speed engine support
- ▶ Dedicated for diesel and gasoline engines
- ▶ Shorter commissioning time – USB one-cord power supply and programming
- ▶ All setpoints and I/O's configurable via front panel



ComAp is a member of AMPS (The Association of Manufacturers of Power generating Systems).



ComAp products meet the highest standards, with every stage of production undertaken in accordance with the ISO certification obtained in 1998.

Features

▶ 3 phase mains measurement

- Over/Under frequency
- Over/Under voltage
- Phase rotation

▶ 3 phase generator protection ⁷⁾

- Over/Under frequency
- Over/Under voltage
- Phase rotation
- Overcurrent/Overload ⁶⁾

▶ True RMS voltage measurement

- 3 phase mains voltage ¹⁾
- 3 phase generator voltage ⁷⁾
- Voltage range 277 V p-n, 480 V p-p
- Maximal measured voltage 300 V p-n

▶ True RMS current measurement ⁶⁾

- 1 generator phase current
- Current range 5 A
- Maximal measured current 10 A
- CT ratio range 1 – 5000

▶ Engine protection

- Over/Under speed
- High temperature
- Oil pressure
- Low fuel warning
- Battery flat detection

▶ Shutdown warning

▶ User interface

- Graphic 128 x 64 pixel display
- Icon menu, no text
- Setpoints adjustable via controller buttons or PC
- Buttons with mechanical feedback
- Special LCD screen / Light tower support

▶ History

- Running hours
- 10 events, warnings or shutdown alarms with running hours stamp
- Yellow and red alarms from ECU

▶ Inputs and outputs

- 3 configurable analog inputs with wide list of predefined senders ²⁾
- COM terminal for analog inputs
- 6 binary inputs ³⁾
- 1 binary input is dedicated for controller remote wake up
- All outputs have positive logic (high side)
- All outputs are overcurrent protected
- 2 high current 6 A long – 10 A short
- 4 low current 0,5 A
- D+ pre-excitation terminal

▶ EFI engine support

- Engine specific J1939 for all major manufacturers (see table right)
- Diagnostic messages (SPN, FMI number)

▶ Miscellaneous features

- “Zero” power consumption mode
- Maintenance warning
- Customer logo screen
- Weak battery genset starting
- USB one-cord power supply and programming
- All setpoints and I/O's configurable via front panel
- AMF and MRS in one model ¹⁾
- Voltage autodetect ⁵⁾
- Gasoline engine support-choke output

▶ Communication interface

- USB on board
- CAN interface (J1939 only)

▶ Mechanical and operation parameters

- Unit dimension 118 x 108 mm
- Cutout dimension 96 x 96 mm
- Sealed front face rated for IP65 for GASKET 4x405 ⁴⁾
- Operation temperature -20 °C to +70 °C
- Power supply voltage 5–36 V
- Voltage drops shorter than 50 ms do not affect operation

InteliNano^{NT} controllers support J1939 for all major brands:

- | | |
|------------------|---------------|
| • Caterpillar | • MAN |
| • Cummins | • MTU |
| • Detroit Diesel | • Perkins |
| • Deutz | • Scania |
| • GM | • Sisu |
| • Isuzu | • Volvo Penta |
| • Iveco | • Yanmar |
| • John Deere | • and others |
| • Kubota | |



KEY

MRS – manual and remote start controller
 AMF – automatic mains failure start controller

- ¹⁾ Only for AMF model
- ²⁾ Analog inputs are shared with binary inputs
- ³⁾ 1 binary input is shared with binary output
- ⁴⁾ Optional GASKET has to be ordered separately
- ⁵⁾ Only when AMF mode is disabled
- ⁶⁾ Only for InteliNano Plus model
- ⁷⁾ InteliNano Plus – 3 phases in MRS mode / 1 or 2 phases in AMF mode

Order codes

Product	Order code
InteliNano ^{NT} MRS	IN-NT MRS
InteliNano ^{NT} AMF	IN-NT AMF
InteliNano ^{NT} PLUS	IN-NT PLUS
IP65 Gasket	GASKET 4x405

ANSI CODES

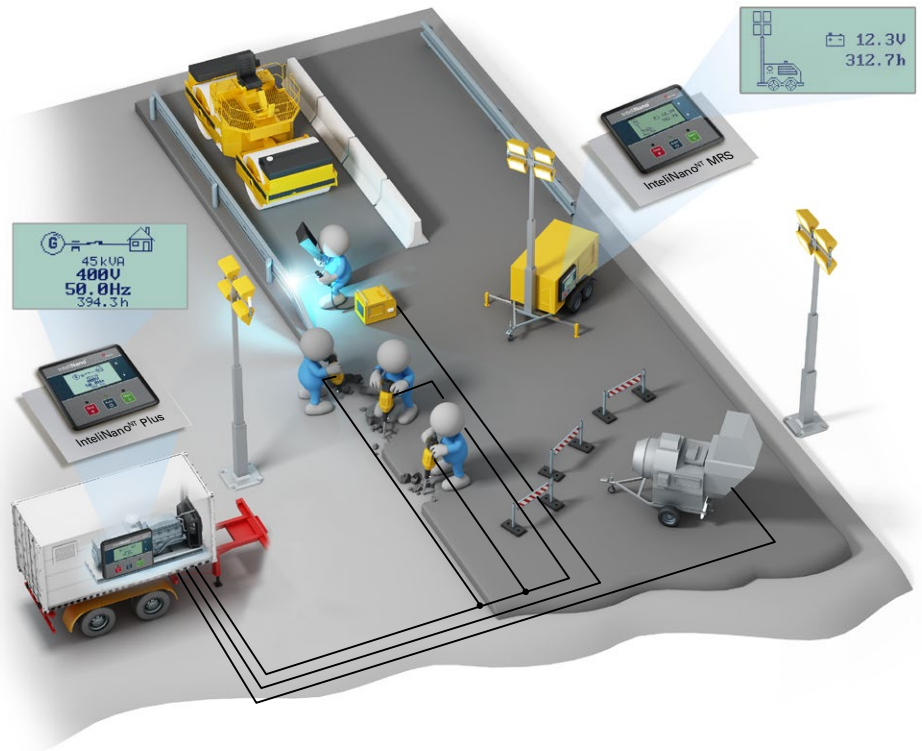
ANSI code	Protection
59	Overvoltage
27	Undervoltage
81H	Overfrequency
81L	Underfrequency
47	Phase rotation*
71	Gas level

* Fixed setting

Typical applications

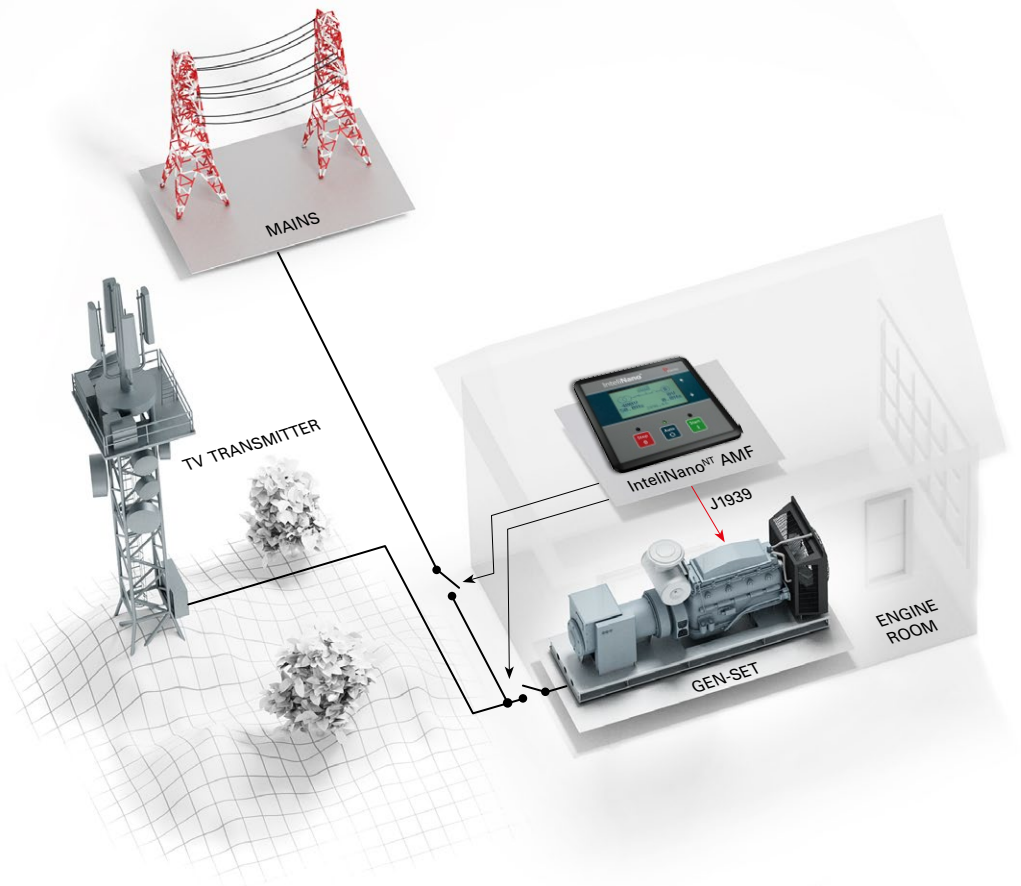
PRIME POWER SYSTEM

- ▶ Manual and remote start of gen-sets with electronic engines. IntelliNano^{NT} MRS starts, controls and monitors the gen-set and controls the circuit breaker to supply the load.
- ▶ Generator is protected by built in over/under voltage and frequency protection systems.
- ▶ Controller communicates with engine management unit via CAN J1939 bus and shows engine values and alarms on graphical LCD screen.
- ▶ Prolonged battery lifetime – controller enters to sleep mode when generator is not used long time.
- ▶ Special LCD screen for Light tower support



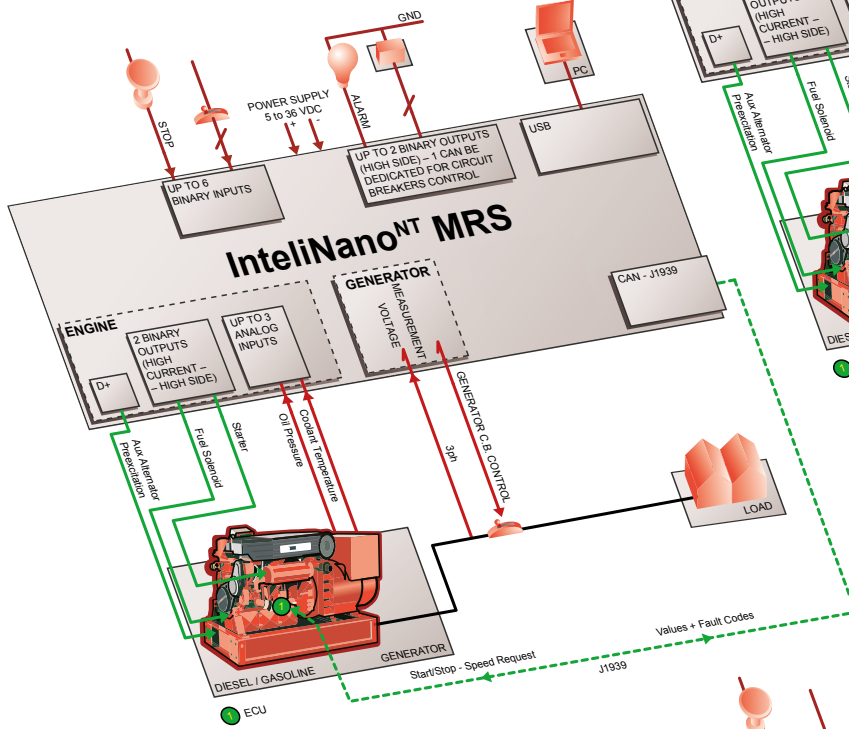
STANDBY SYSTEM

- ▶ Stand-by gen-set with electronic engine. IntelliNano^{NT} AMF continuously monitors a mains supply and automatically starts an engine and switches load to a standby generator set in case of failure.
- ▶ Generator is protected by built in over/under voltage and frequency protection systems.
- ▶ Controller communicates with engine management unit by CAN J1939 bus and shows engine values and alarms on graphical LCD screen.

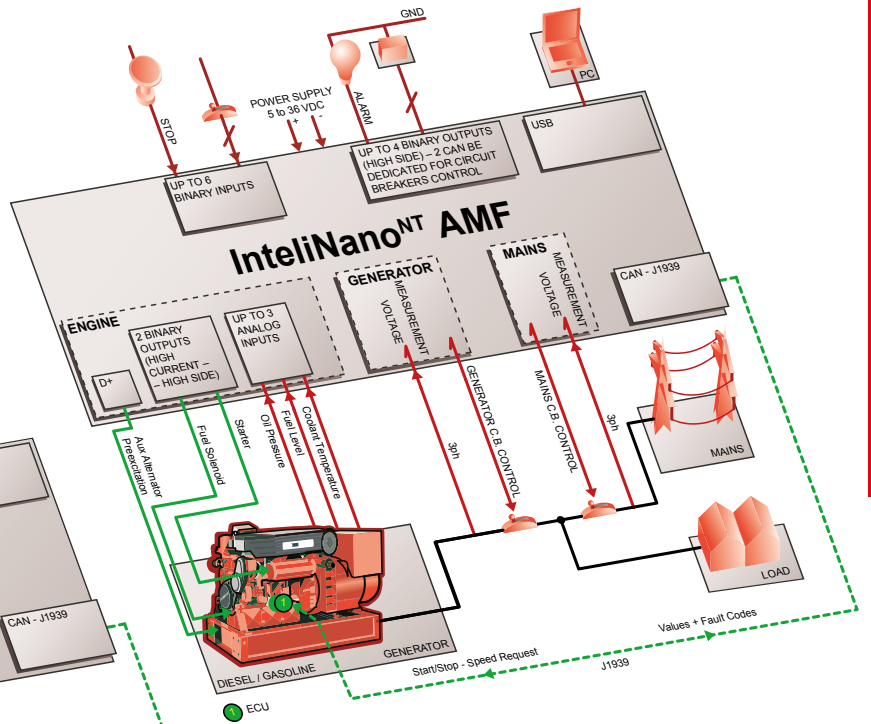
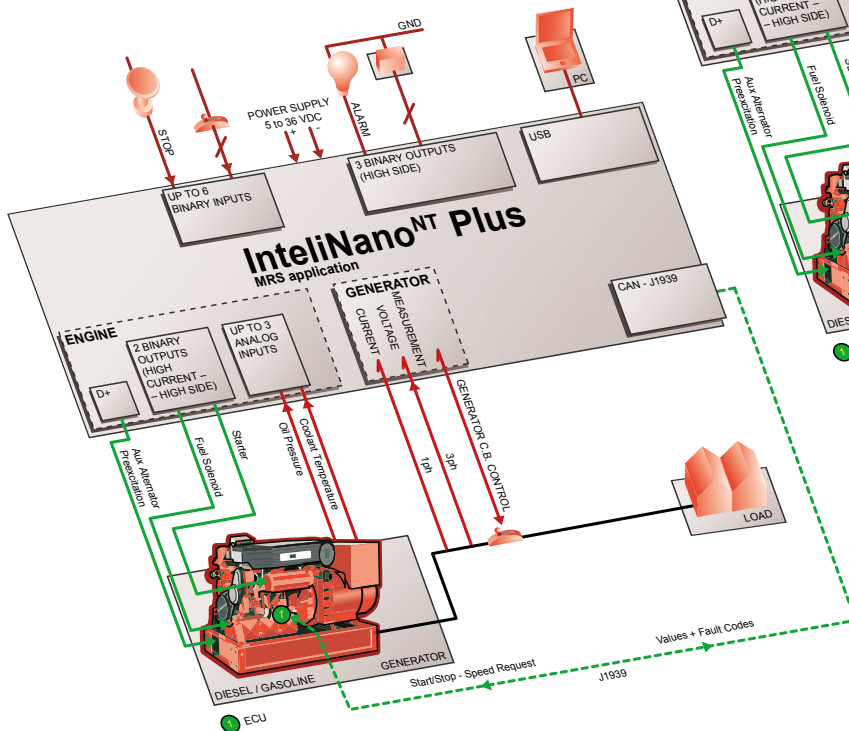


Schematic diagrams

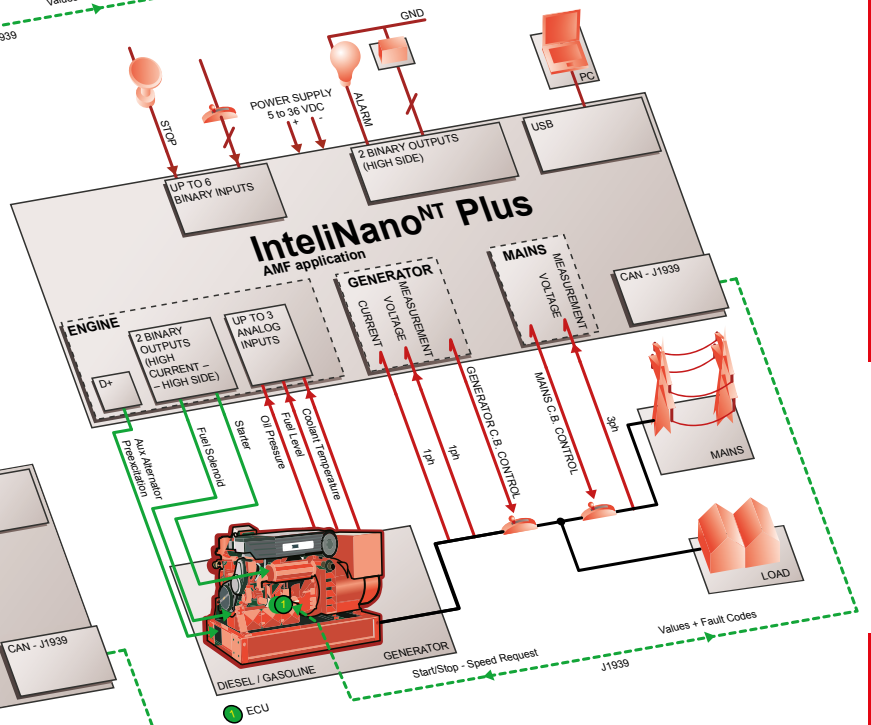
InteliNano^{NT} MRS



InteliNano^{NT} PLUS



InteliNano^{NT} AMF



Available models



IntelNano^{NT} MRS

MANUAL AND REMOTE START CONTROLLER WITH SUPPORT FOR EFI ENGINE

- ▶ 3 phase generator voltage measurement
- ▶ Up to 3 analog inputs (shared with binary inputs)
- ▶ COM terminal for analog measurement
- ▶ Up to 6 binary inputs (1 binary input is shared with binary output)
- ▶ 2 high side – high current outputs
- ▶ 2 high side binary outputs
- ▶ Automatic or manual GCB control
- ▶ CAN J1939
- ▶ USB
- ▶ Big graphical LCD
- ▶ D+ pre-excitation terminal
- ▶ “Zero” power consumption



IntelNano^{NT} AMF

AUTOMATIC MAINS FAILURE START CONTROLLER WITH SUPPORT FOR EFI ENGINE

- ▶ 3 phase mains voltage measurement
- ▶ 3 phase generator voltage measurement
- ▶ Up to 3 analog inputs (shared with binary inputs)
- ▶ COM terminal for analog measurement
- ▶ Up to 6 binary inputs (1 binary input is shared with binary output)
- ▶ 2 high side – high current outputs
- ▶ 4 high side binary outputs
- ▶ Automatic or manual MCB and GCB control
- ▶ CAN J1939
- ▶ USB
- ▶ Big graphical LCD
- ▶ D+ pre-excitation terminal
- ▶ “Zero” power consumption mode
- ▶ AMF and MRS in one model



IntelNano^{NT} PLUS

AMF AND MRS CONTROLLER WITH CURRENT MEASUREMENT AND SUPPORT FOR EFI ENGINE

- ▶ 3 phase mains voltage measurement
- ▶ 1/3¹⁾ phase generator voltage measurement
- ▶ 1 phase generator current measurement
- ▶ Up to 3 analog inputs (shared with binary inputs)
- ▶ COM terminal for analog measurement
- ▶ up to 6 binary inputs (1 binary input is shared with binary output)
- ▶ 2 high side – high current outputs
- ▶ 4 high side binary outputs
- ▶ Automatic or manual MCB and GCB control
- ▶ CAN J1939
- ▶ USB
- ▶ Big graphical LCD
- ▶ D+ pre-excitation terminal
- ▶ “Zero” power consumption mode
- ▶ AMF and MRS in one model

KEY

¹⁾ 3/3 phase when used as MRS controller

References



Slovenia STUBEJ



Stubelj is a Slovenian company with 25 years experience of producing and selling 2.0 – 2000 kVA generating sets, and providing all services connected with this business.

“Our company has been using ComAp controllers for many years. We have had a good long-term experience with IntelliLite^{NT} and IntelliGen^{NT} controllers. We are now using the new IntelliNano^{NT} controllers on our smaller generating sets, which we are very happy with. The IntelliNano^{NT} gen-set controllers provide protection, monitoring and control to small-to-medium sized generator sets and pack plenty of power into a small unit at a very good price.”

Marko Stubelj
Purchasing Manager
www.stubelj.si

Functions chart for InteliNano^{NT} models

	InteliNano ^{NT} MRS	InteliNano ^{NT} AMF	InteliNano ^{NT} PLUS
Model	MRS	AMF	PLUS
Order code	IN-NT MRS	IN-NT AMF	IN-NT PLUS
Binary inputs/outputs	6/4 ¹⁾	6/6 ¹⁾	6/6 ¹⁾
Analog inputs	3 ²⁾	3 ²⁾	3 ²⁾
AMF function	–	●	●
MRS function	●	●	●
Input configuration	●	●	●
Output configuration	●	●	●
Voltage measurement Gen. / Mains	3 ph / –	3 ph / 3 ph	1 ph ⁴⁾ / 3 ph
Current Measurement	–	–	1 ph
Voltage autodetect	●	● ³⁾	● ³⁾
Generator protections	●	●	●
Event log / Running hours history	●	●	●
GCB/MCB control with feedback	● / –	● / ●	● / ●
D+ battery charging alternator circuit	●	●	●
Engine hours	●	●	●
CAN-J1939 interface	●	●	●
USB communication port	●	●	●
LCD screen	●	●	●
Alarm LED	●	●	●
Weak battery genset starting	●	●	●
Maintenance warning	●	●	●
“Zero” power consumption	●	●	●
Light tower support	●	● ³⁾	● ³⁾
IP65	○	○	○

KEY ¹⁾ 1 binary input is shared with binary output ²⁾ Analog inputs are shared with binary inputs
³⁾ Only when AMF function is disabled ⁴⁾ 3 ph when used as MRS controller ● included – excluded ○ optional

For more information about our products and applications visit

www.comap.cz



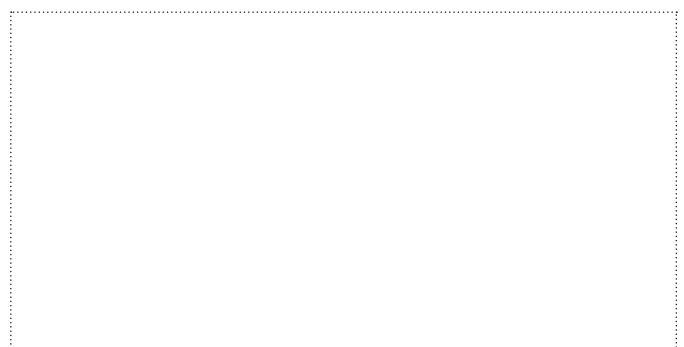
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