

Industrijski ROBOTI



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14-Dec-07

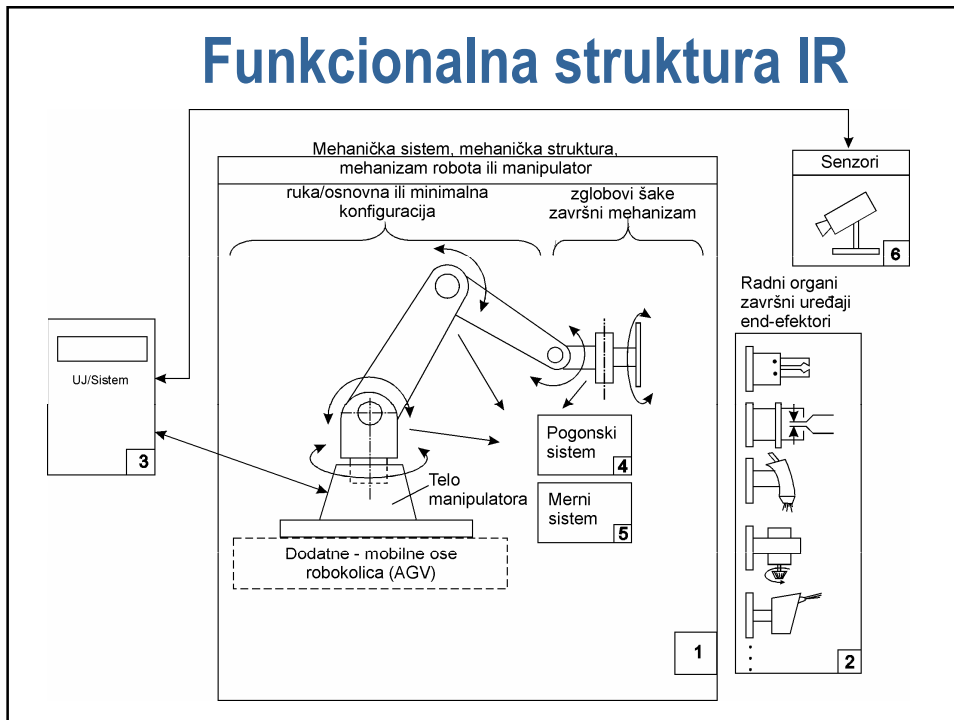
Industrijski ROBOT

Def. (ISO 8373)

je višenamenska, reprogramabilna, manipulaciona i automatski upravljana mašina sa više stepeni slobode, koja može biti u fiksiranom položaju ili mobilna, a koristi se za automatizovane industrijske primene.

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Funkcionalna struktura IR



Roboti

- Sa serijskom kinematikom



- Sa paralelnom kinematikom

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Osnovne tipske konfiguracije

- Dekartova
- Polarno cilindrična
- Sferna
- Horizontalna zglobna-laktasta SCARA
- Vertikalna zglobna-laktasta, antropomorfna (čovekolika)

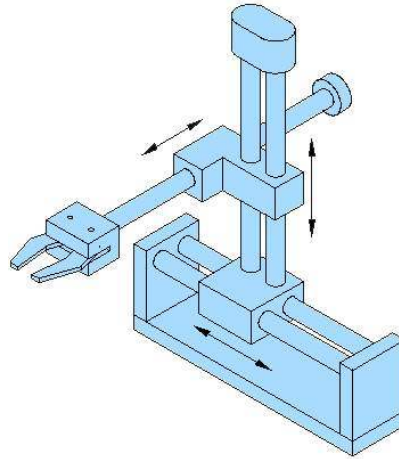
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Dekartova (TTT)

Cartesian Robot

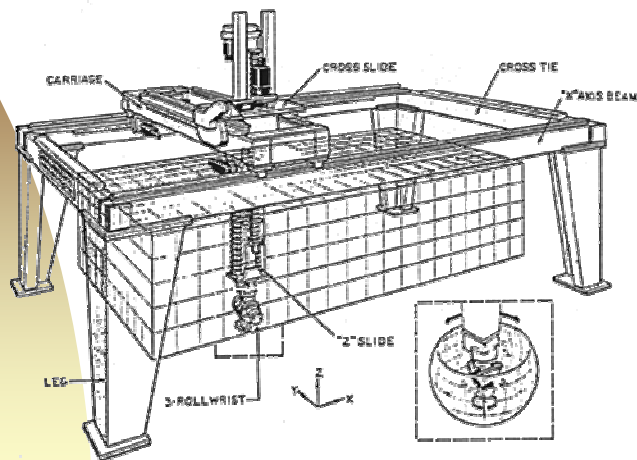
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Dekartova



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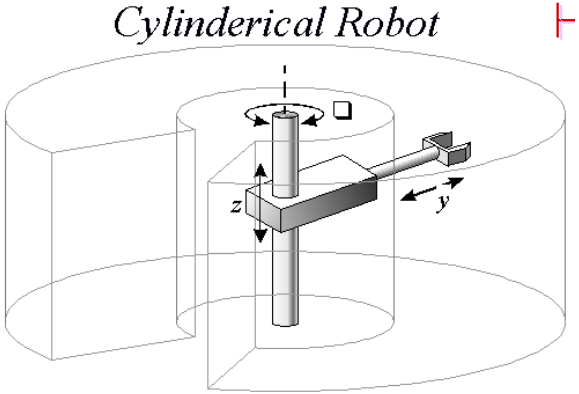
Dekartova



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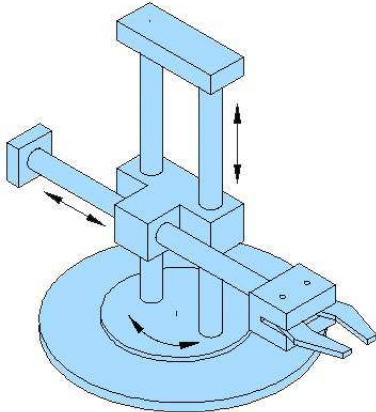
Cartesian & Gantry

Polarno-cilindrična (RTT)

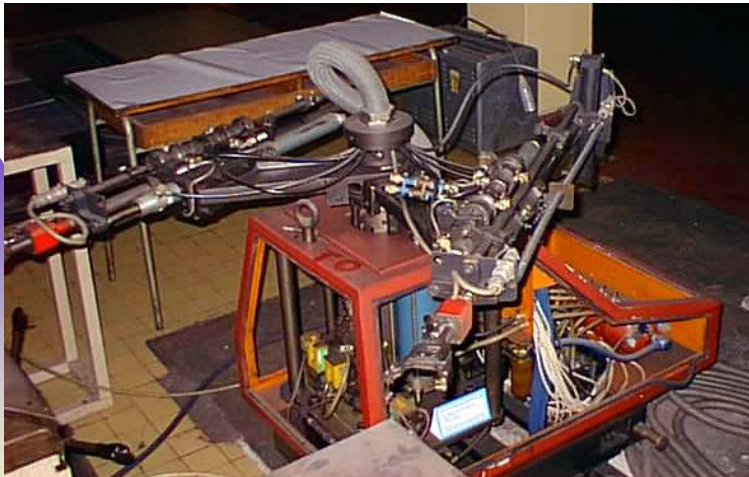


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Polarno-cilindrična



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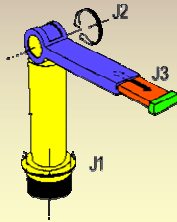


**Dvoruki
LOLA robot
RPD 1.25**
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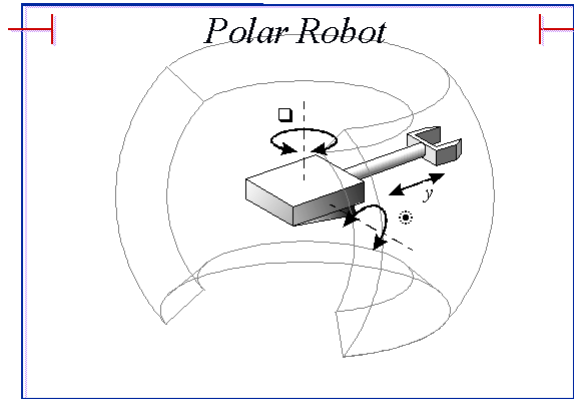


**Robotizovana
ćelija za
opsluživanje
ekscentar
prese - ZMA**
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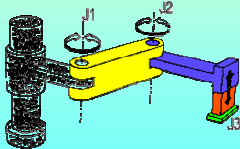
Sferna konfiguracija (RRT)



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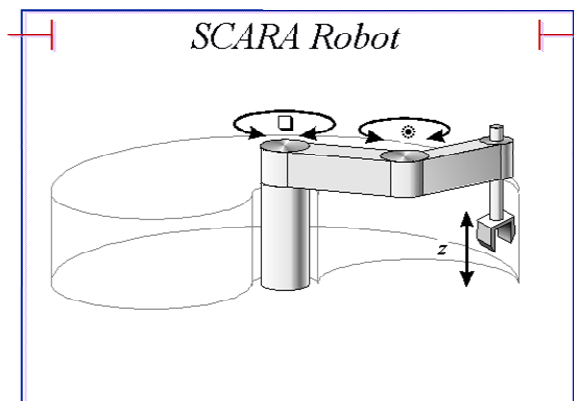


Horizontalna zglobna - SCARA (RRT ili TRR)



Selective Compliance Assembly Robot Arm

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SCARA

palletized parts

parts conveyor

product conveyor

partially assembled products

assembly site

six-position turret on last link

wide conveyor

product

palletized kit

turning device

gate device

conveyor

product

parts feeder

turning device

Selective Compliance Assembly Robot Arm

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Vertikalna zglobna (RRR)

J1

J2

J3




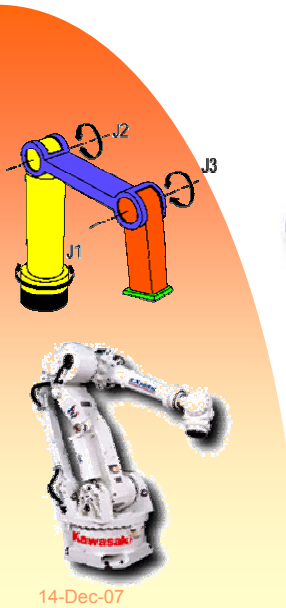
J1

J2

J3


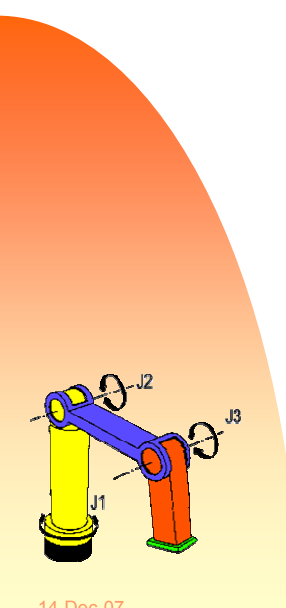
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Kawasaki Robot

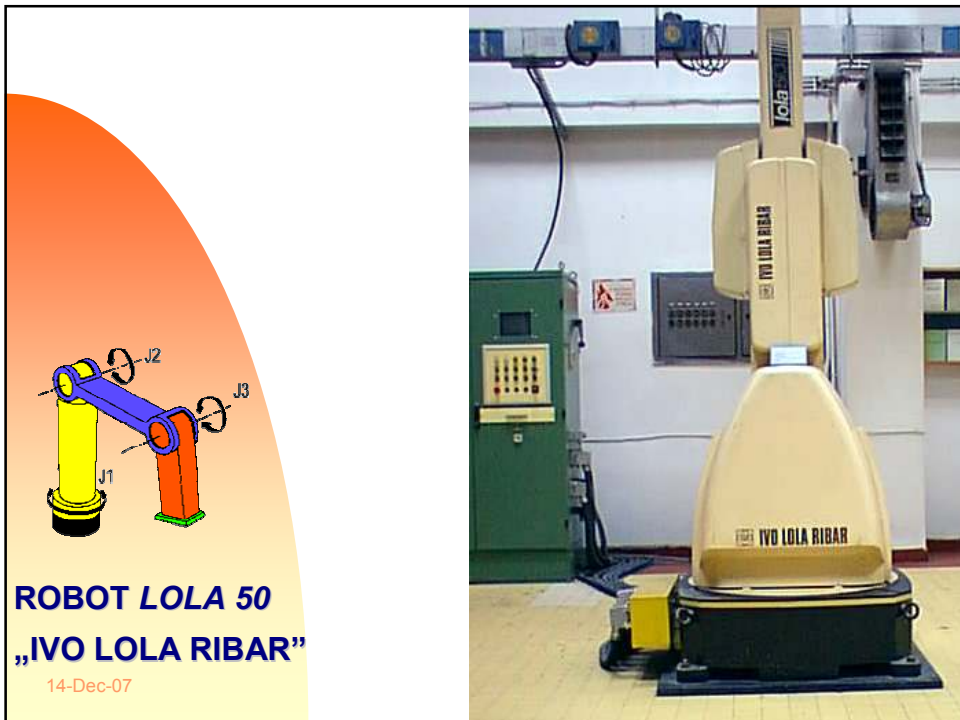


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KUKA robot



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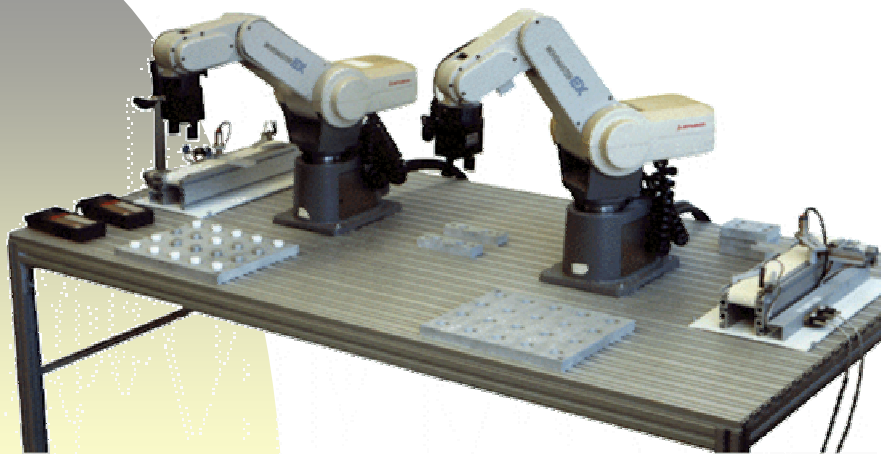


MovemasterEX



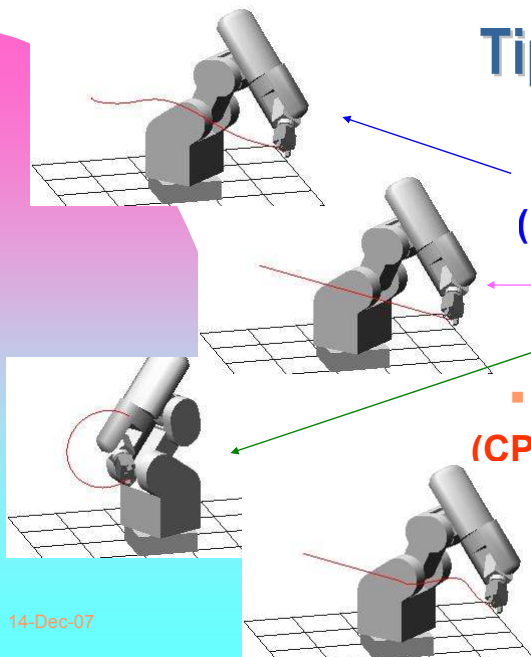
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MovemasterEX



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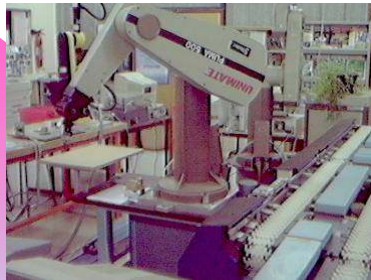
Tipovi kretanja IR



- Tačka po tačka (PTP - „Point to Point”)
- Linearna kretanja
- Kružna kretanja
- Kontinualna kretanja (CP - „Continuous Path”)

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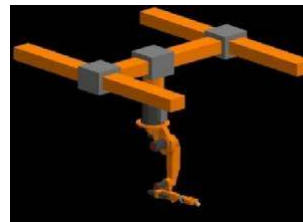
Primeri instalisanja



- Podni



- Laboratorijski (na stolu)



- Viseći - „njihajući”

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• AGV - robokolica



• Šinski



• Viseći - šinski

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Klasifikacija IR (sa stanovišta funkcije i primene)

MANIPULACIJA

OBAVLJANJE
PROCESA

MANIPULACIJA
I OBAVLJANJE PROCESA

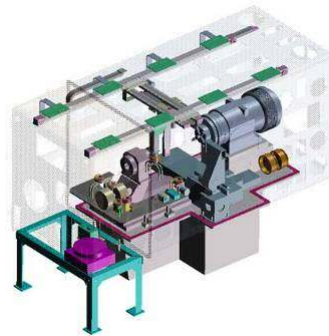
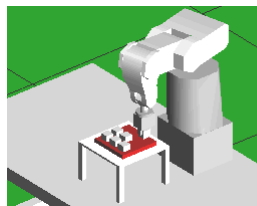
SPECIJALNI
ZADACI

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MANIPULACIJA

Premeštanje objekata sa jedne na drugu lokaciju

- Paletizacija / Depaletizacija
- Opsluživanje regalnih skladišta
- Opsluživanje mašina (manipulacija pripremcima i gotovim delovima u zoni obrade)
- Pakovanje
- ...



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OBAVLJANJE PROCESA

- Zavarivanje
 - ◆ tačkasto, elektrolučno ...
- Obrada REZANJEM
 - ◆ brušenje, obaranje ivica, poliranje, bušenje, odsecanje nalivaka ...
- Sečenje
 - ◆ laserom, plazmom, vodenim mlazom
- ...



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MANIPULACIJA I OBAVLJANJE PROCESA

Upotreba IR u funkciji
manipulacije delom i
obavljanja procesa u
MONTAŽI:

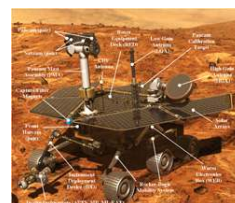
- automobila,
- motora,
- čipova,
- ...



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SPECIJALNI ZADACI

- **Merenje i kontrola kvaliteta**
- **Kontrola u nuklearkama**
- **Istraživanje kosmosa**
- **Uklanjanje mina**
- ...



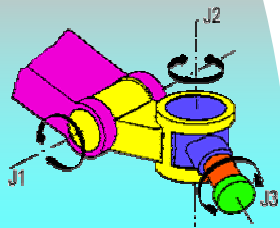
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End - efektori (EE)

EE ili završni mehanizam treba da bude univerzalan, lako izmenljiv i spojiv pomoću „interface” ploče sa segmentom IR.

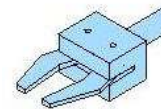
EE mogu biti:

- Hvatači
- Alati
- Merni pipci
- ...



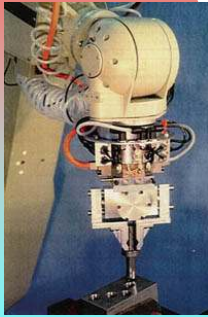
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End-efektor - Hvatač



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End-efektor - ALAT



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Primeri primene IR

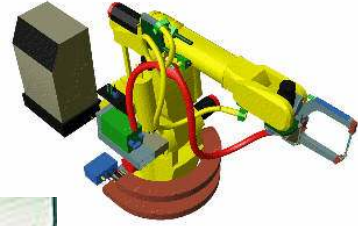


Industrial robots

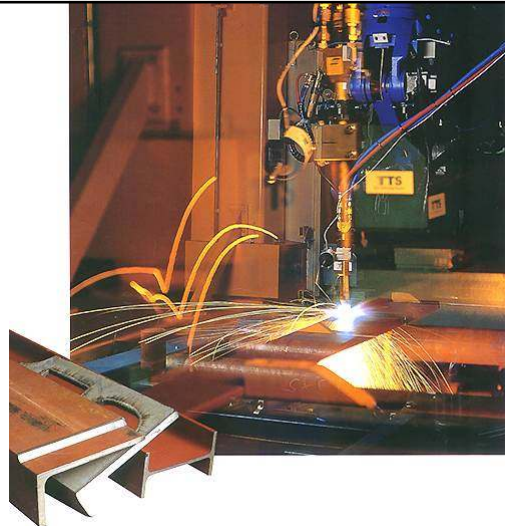


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Primeri primene IR



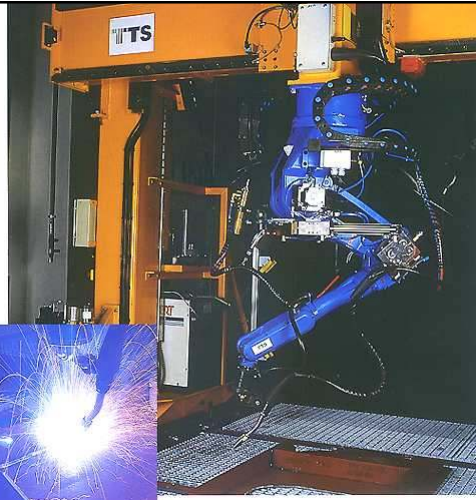
Primeri primene IR



Primeri primene IR



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Primeri primene IR



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