



EC/DGVII/TRANSPORT

PERSPECTIVES OF IMPLEMENTING  
AUTOMATED AND ROBOTICS-BASED  
TECHNIQUES IN ROAD INFRASTRUCTURE  
CONSTRUCTION AND MAINTENANCE  
OPERATIONS

by

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# European ART Feasibility Study

- Aging Road Network
- Increasing Traffic Demand
- Increasing Heavy Vehicle Traffic
- High Operational Requirements for the European Road Network
- Motorways: 30000 ECU/km/year

# Selection of Important (EU) Operations



**25 critical operations selected as candidates for ART implementation**



**Tasks of operations evaluated and identified suitability for adopting ART on the basis of being **hazardous, tedious, costly, under- and bad performing.****

# Technical Scenarios

- **Kinematics**
- **Gripper System**
- **Drive System**
- **Undercarriage**
- **Sensors**
- **Control System**
- **Man-Machine Interface**
- **Information Flow**
- ***One Operator per Machine***

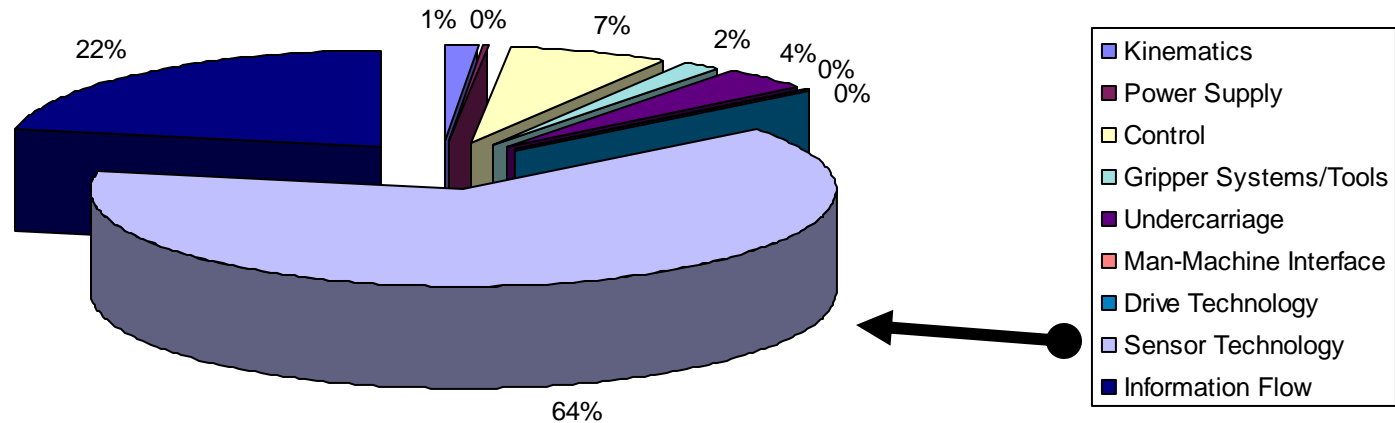
**PRODUCT**

**DEVELOPMENT**

**RESEARCH**

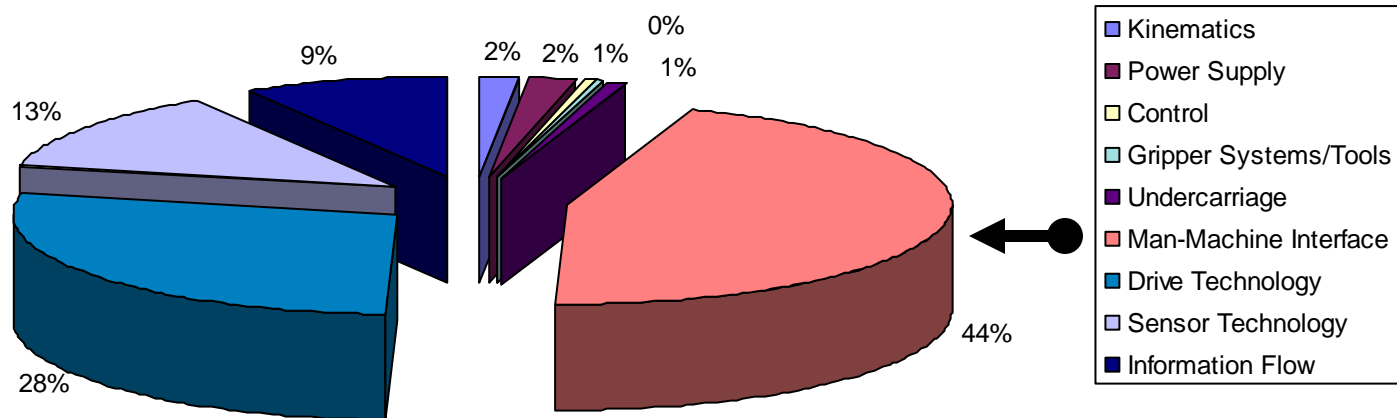
# Systems Implementation Cost

## Short-range Development Cost



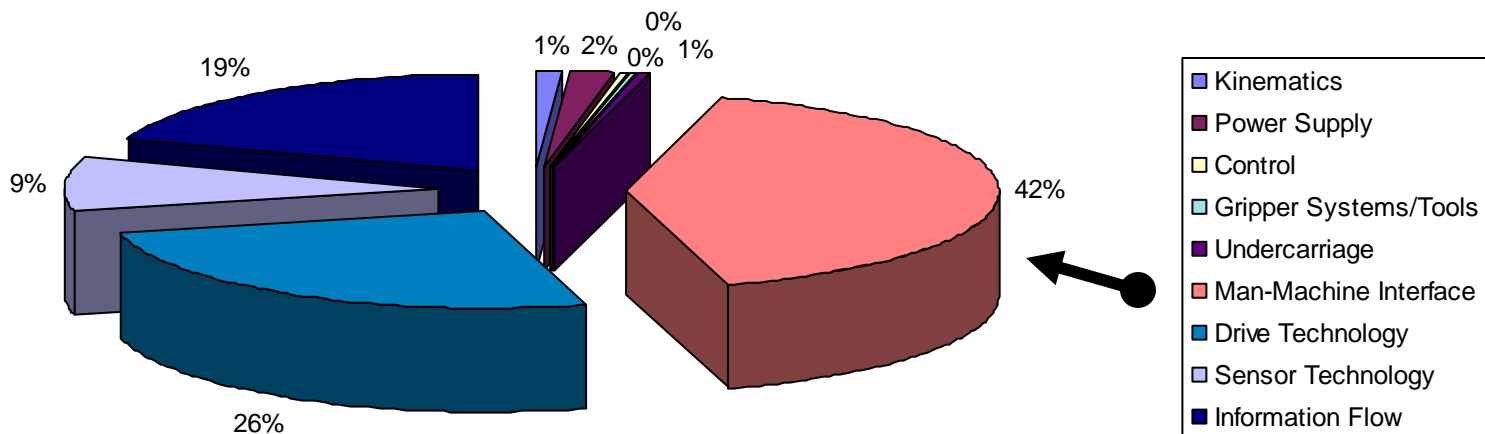
# Systems Implementation Cost

## Medium-range Development Cost



# Systems Implementation Cost

## Long-range Development Cost



# ART Funding Needed

Period	Funding [kECU]
Short-range	279 – 680
Medium-range	1584 – 9096
Long-range	2291 - 12699



# ART Benefits on Paving

<b>Criteria</b>	<b>Benefits</b>
Duration	++ (>20%)
Idle Times	+
Safety	++
Cost	+
Workers	++
Space	+
Quality	+

# Interesting Parties

- Manufacturing Industry
- Transport Policy Makers