



PROJECT NO: FP6-508489

Cleanhand

Preventing 10.000 European hospital deaths by securing efficient hand disinfection through an automatic, easy to use, environmentally friendly and verifiable disinfection process.

Co-operative Research (CRAFT)

Horizontal Research Activities Involving SMEs

Publishable final activity report
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Project Coordinator: Mainsani AS Document revision: 0

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1 Project execution

1.1 Project information

CONTRACT NO: COOP-CT-2004-508489
TITLE OF PROJECT: Cleanhand

Preventing 10.000 European hospital deaths by securing efficient hand disinfection through an automatic, easy to use, environmentally friendly and verifiable disinfection process.

COORDINATOR: Mainsani AS
SME EXPLOITATION MANAGER: Mainsani AS
Project web site www.cleanhand-project.com

1.2 List of project contractors

Participant name	Participant short name	Country
Mainsani	Mainsani	NO
Capflow.	Capflow	B
Ascor	Ascor	PL
Mikron Tunsberg AS	MTB	N
SOLEMS S.A.	SOLEMS	F
Skidata AG	Skidata	A
Medatec Ges.m.b.H	Medatec	A
National Institute of Technology	TI	N
Pera Innovation Limited	PERA	UK

1.3 Objectives

The overall objective of the project is to develop an automated and quality controlled hand disinfecting/cleaning technology with a primary market in the health care sector.

1.4 Work and results

A prototype hand cleaning/disinfecting machine was developed which included the following developed sub systems:

- A low pressure fluid spraying system was developed that is able to spray human hand evenly and completely with disinfectant fluid
- A system that automatically used spent refills for disposal of waste disinfectant fluid.
- A computer vision system that the user spreads his fingers in the machine and that detects jewelry on the hands of the user
- A wireless user ID system based on RFID technology
- A flexible, power full and low cost main control system system with LCD and push buttons user interface as well as central management functionality.
- A user logging and wireless reporting software
- A industrial designed cabinet



The mass production costs of the system is competitive.

The prototype passed the EN-1500 “Hygienic hand rub” test applicable to the health care sector and resulted in 37% less bacteria on the hands of the test subjects than in the case of the standard reference test.

All objectives have been reached.

To our knowledge there are no other products that can deliver the same quick and quality controlled hand cleaning.

1.5 Impact

The developed technology potentially could result in very large savings in the form of costs, human lives and suffering due to harmful contamination from working in or visiting a health care institution.

The ability to realize this potential is only limited by the parts ability to bring products on the market.

A significant effort has been done in the project to disseminate the project results and to commercially exploit the results.

Commercial products are planned to be launched in 2008. In addition to the cleaning device there are spin-off projects developing a health care institution hand hygiene management software and a state-of-the-art disinfectant fluid based on nano technology.

2 Dissemination and use

2.1 Exploitable knowledge and its Use

Exploitable Knowledge (description)	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable for commercial use	Patents or other IPR protection	Owner & Other Partner(s) involved
Enhanced understanding of various image sensing technologies	Image capture hardware and software platform	General	2007-2008	Secrecy	Capflow, Mainsani
Image recognition of human hands	Image analysis software	Health care, hygiene, biometrics	2008-2009	Secrecy	Capflow, Mainsani
Enhanced understanding of jewelry detection computer algorithms	Jewelry detection software	Health care, hygiene,	2008-2009	Secrecy	Capflow, Mainsani
Enhanced understanding of spraying systems for human hands	Spraying system	Health care, hygiene	2007-2008	Patenting	Mainsani
Enhanced understanding of hand hygiene monitoring	Sanitizer use logging and reporting software and hardware	Health care, hygiene	2007-2009	Patenting	Mainsani, Medatec
Enhanced understanding of automated hand sanitizer design	Automated hand sanitizer	Health care, hygiene	2007-2008	Patenting	Mainsani, All partners
	Hand sanitizer main control system	Health care, hygiene	2007-2008	Secrecy	Mainsani, Capflow, Medatec
Enhanced understanding of refilling	Hand sanitizer refill system that uses spent cartridges for disposal	Health care, hygiene	2007-2008	Patenting	Mainsani, Mikron
Enhanced understanding of hand sanitizer power consumption	Hand sanitizer power supply system.	Health care, hygiene, general	2007-2008	Secrecy	Mainsani Solems

2.2 Dissemination of knowledge

Planned/ actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
2004-2011	Project web site, open section	General public, project members	Global	100 000	TI
2004-2011	Project web site, closed section for project members	Project members	EU	25	TI
2006-2011	Product demo video	Project members, any	Global	200	TI
2004-2007	Meetings and information distribution	Project members	EU	25	TI, Mainsani, All
jan-04	Forskning / Magazine	Norwegian Research Council	Norway	50.000	MainSani
jan-04	Samspill / Magazine	Norwegian Research Council	Norway	50.000	MainSani
jan-04	Aftenposten / newspaper	General public	Norway	400.000	MainSani
March-04	Der Spiegel / Magazine	General public	Germany & EU	1.000.000	MainSani
March-04	Helseveien / internett	General public	Norway	200.000	MainSani
March-04	Presstext.de / Internett	General public	Germany & EU	1.000.000	MainSani
March-04	Vetcontact.com/ Internett	General public	Germany & EU	1.000.000	MainSani
apr-04	Folkehelsen / Seminar	General public	Norway	150	MainSani
May-04	Folkehelsen / Seminar	General public	Norway	150	MainSani
sep-04	Eurekanytt/Magazine	Norwegian Research Council	Norway	50.000	MainSani
sep-04	Forskningsparken	Oslo Research Park	Norway	8	MainSani
sep-04	Folkehelsen / Seminar	General public	Norway	150	MainSani
Oct-04	Springboard UK / Seminar	Norwegian Export Council	UK	50	MainSani
Oct-04	Norwegian Research Council / Seminar	Norwegian Research Council	Norway	200	MainSani
Oct-04	Connect Norway / workshop	Connect Norway Members	Norway	12	MainSani
nov-04	Connect Sweden / Workshop	Connect Sweden Members	Sweden	15	MainSani
jan-05	Craft Meeting / Norway	Craft participants	Norway	10	MainSani
feb-05	First Tuesday Seminar	First Tuesday Members	Norway	250	MainSani
feb-05	Aker Sykehus / Conference	Hygiene Conference	Norway	200	MainSani
March-05	Norwegian/Swedish Trade Commission	Conference	Norway	150	MainSani
March-05	Norwegian Research Council / Seminar	Norwegian Research Council	Norway	200	MainSani
apr-05	Norwegian Patent Council / seminar	General public	Norway	50	MainSani
apr-05	Eureka / Seminar	Norwegian Research Council	Norway	250	MainSani
may-05	Norwegian/Swedish Trade Commission	Conference	Norway	150	MainSani
sep-05	Craft Meeting / UK	Craft participants	UK	10	MainSani
Oct-05	Norwegian Research Council / Seminar	Norwegian Research Council	Norway	200	MainSani
nov-05	Norwegian Trade Commission	General public	Norway	100	MainSani

Planned/ actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
nov-05	Norwegian Research Council / Seminar	General public	Norway	250	MainSani
nov-05	Eureka / Seminar	Norwegian Research Council	Norway	250	MainSani
nov-05	First Tuesday Seminar	First Tuesday Members	Norway	300	MainSani
jan-06	Springfondet / Venture	Board of directors	Norway	5	MainSani
jan-06	Connect Norway / workshop	Connect Norway Members	Norway	12	MainSani
mar-06	Hotswap Sweden	scientists	Sweden	6	MainSani
mar-06	SINTEF, Trondheim	scientists	Norway	4	MainSani
may-06	Forskningsparken	Oslo Research Park	Norway	6	MainSani
june-06	Craft Meeting / Norway	Craft participants	Norway	8	MainSani
sep-06	Sinvent / venture	scientists	Norway	4	MainSani
Oct-06	Forskningsparken	Oslo Research Park	Norway	200	MainSani
nov-06	Norwegian Research Council / Seminar	General public	Norway	180	MainSani

2.3 Publishable results

It has been decided not to disclose more public project information than that described in this document for IPR protection reasons.