

## CamCon

## Kick off meeting Copenhagen 18 May 2010





istworld



**Newcastle** University

Universiteit Utrecht







Centre de Recerca en Sanitat Animal



## Agenda

- 10.00 10.15 Welcome and introduction to the meeting and CamCon (Merete)
- 10.15 10.20 Presentation of the External Advisory Board (Merete)
- 10.20 11.30 Presentation of the partners (5 minutes each)
- 11.30 12.30 Meeting of WP Committee WP1 and WP2
- 12.30 13.15 Lunch
- 13.15 14.00 Meeting of WP Committee **WP3**, **WP5** and **WP4**
- 14.00 14.30 Meeting of the Advisory Board
- 14.30 14.45 Meeting of WP Committee WP6
- 14.45 15.00 Presentation from the COM
- 15.00 15.30 Coffee break
- 15.30 16.00 Meeting of the **Executive Board**
- 16.00 16.15 Meeting of the General Assembly
- 16.15 16.30 Advise from Advisory Board
- 16.30 17.00 Any other business
- 17.00 End of meeting



## Advisory board

- Distinguished experts
  - Arie Havelaar
  - Eva Olsson Engvall
  - Tage Lysgaard
- Will advise the Executive Board on scientific strategic matters
- One of the Advisory Board members will be assigned as the chairman
- The Advisory Board will meet in conjunction with the Annual General Meetings
  - Evaluate presentations, review progress, and advise the Executive Board on the possible need for adjustments
- The board will report to the Coordinator through its chairman
- The Coordinator and Deputy Coordinator will be members of the board *ex-officio*



## Partners

Partner		WP1	WP2	WP3	WP4	WP5
NVI	Norway	X			Х	Х
DTU	Denmark	X	Х	Х	Х	Х
ULIV	UK	X	X		Х	Х
UU	The Netherlands	X	X		Х	Х
DIA	Denmark					Х
CVI-LEI	The Netherlands		X		Х	
UMinho	Portugal		X			
UNEW	UK	X				
CSA	Spain	Х	X		Х	Х
NVRI	Poland	Х		X	Х	Х

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# Meetings

- The chairperson of a Consortium Body shall convene the meetings
- Any member of the General Assembly and Executive Board
  - □ should be present or represented at any meeting
  - will appoint a substitute to attend and vote
  - □ shall participate in a cooperative manner
- Once a year, General Assembly, Executive Board and WP Committees meetings will be joined in an Annual General Meeting. In addition such a meeting may include
  - □ Advisory Board meeting.
  - □ Moderated workshops (within one WP/Task and/or between WPs/Tasks)
  - Dissemination events (with stakeholders)
- Participants will be informed about agenda at least four weeks before
- Voting rules and quorum
  - □ Not decide validly unless 2/3 of its members are present/represented. Each member have one vote. Decisions shall be taken by a 2/3 majority.
- Veto rights
  - If severely affected by a decision, a member may exercise a veto with respect to the corresponding decision or relevant part of the decision (see Consortium Agreement)



## WP Committees

- One representative of each participant having a task within the respective WP
- Chaired by Work Package leader Meetings quarterly (telephone)
- Each WP Committee shall manage the respective WP, in particular with regard to:
  - □ timely delivery of reports and results to the Executive Board and the Coordinator
  - □ plan the activities for the future period
  - □ alerting the Executive Board and the Coordinator in case of problems
  - decide exchange of tasks and budgets between Participants (when no impact beyond WP)
- The WP Leader shall have the following functions:
  - communicate plans, deliverables, documents, information between its members and, if relevant, to the Executive Board
  - □ submit Plan of the WP to the Executive Board, propose update of the Plan
  - □ coordinate on a day-to-day basis the progress of the work under the WP
  - □ following up decisions made by Consortium Bodies insofar as they affect the WP
  - advising the Coordinator of any discrepancy with the Plan, including delays



# WP1 Epidemiology

## Tom Humphrey, ULIV

Other participants

□ All except DIA, CVI-LEI, UMinho



## WP1 Objectives

•To examine external risk factors for flock colonization in different areas of Europe.

•To examine the role of climate and geography in determining flock colonization rates.

•To determine the role of farm management factors and their interaction with climate and geography in determining colonization rate.

•To use Structural Equation Modelling to investigate the pathways of risk of colonization arising from environmental factors, management and flock welfare to quantify and integrate risks across the different potential routes to colonization in different areas of the EU.

•To determine the roles of the in-house environment and bird health and welfare in colonization.

•To examine the distribution of *Campylobacter* sub-types in EU broiler production in relation to climate, geography/region, husbandry and farm management.



# Task 1.1 Risk factors for Camp. colonization in broilers

- Task leader: Hanne Rosenquist, DTU
- Participants: NVI, ULIV, UU, CSA, NVRI

No	Deliverable	Month
1.1.1	Questionnaire and protocol for data collection agreed with all participants	3
1.1.2	Report on broiler production across Europe (based on questionnaire)	12
1.1.3	Research publication of risk factors for flock colonization including climatic conditions	36



# Task 1.1 Risk factors for Camp. colonization in broilers

- Questions we need to address asap
  - How do we ensure comparability?
    - Age of sampling
    - Place of sampling
    - Detection method
  - How do we ensure a high response rate?
    - Minimum requirements?
    - Follow up with interviews?
  - Which climate data are available?



# Task 1.2 A longit. study of broiler flocks in UK and Spain

- Task leader: Tom Humphrey, ULIV
- Participants: UNEW, CSA
- Two subtasks UK and Spain

No	Deliverable	Month
1.2.1	Study protocol finalised	9
1.2.2	Data analysis of first-year intensive flock sampling in Spain and the UK	26
1.2.3	Paper on two-year study in UK and Spain	46
1.2.4	Identification of management intervention to minimize risk of colonization of broiler flocks	46



### Task 1.2.1-

A two year longitudinal study of *Campylobacter* spp. in broiler flocks in the UK.





Task 1.2.1













### Bird health and welfare









# Task 1.3 Importance of flies in transmiss. of Camp. to broiler flocks

- Task leader: Birthe Hald, DTU
- Participants: UNEW, ULIV, CSA

No	Deliverable	Month
1.3.1	First-year report on flies	24
1.3.2	Paper on the role of insects in colonization of broilers with Campylobacter in UK and Spain	48



### Task 1.3 Importance of flies

#### Subtask 1.3.1 C. carriage rates

	Capture	Speciation	Culture
DTU	Superwise	Assist in Superwise	Superwise
UNEW		Superwise	
ULIV	Х	Х	Х
CSA	х	Х	х

2 samplings per flock à 50 flies Week 1-2, week 3-4



### Task 1.3 Importance of flies

#### Subtask 1.3.2 Insect community

	Trapping	Toxonomical sorting	Statistical analyses
DTU	Superwise	Х	Х
UNEW		Superwise	
ULIV	Х		
CSA	Х		











#### Wall inlet bags for collecting insects









# Task 1.4 Distribution of Camp. subtypes in EU broiler production

- Task leader: Frieda Jorgensen, ULIV
- Participants: NVI, DTU, UU, CSA, NVRI

No	Deliverable	Month
1.4.1	Paper on Campylobacter sub-types in EU broiler production	44



# Task 1.4 Distribution of *Campylobacter* sub-types in EU broiler production

**Multi-locus sequence typing** 

- •Amplification and sequencing of 7 house-keeping genes
- •Assignment of alleles to each gene
- •Alleic profile generated = sequence type (ST) and clonal complex

JOURNAL OF CLINICAL MICROBIOLOGY, Jan. 2001, p. 14–23 0095-1137/01/\$04.00+0 DOI: 10.1128/JCM.39.1.14–23.2001 Copyright © 2001, American Society for Microbiology. All Rights Reserved.

Multilocus Sequence Typing System for Campylobacter jejuni

K. E. DINGLE,<sup>1</sup> F. M. COLLES,<sup>1</sup> D. R. A. WAREING,<sup>2</sup> R. URE,<sup>2</sup> A. J. FOX,<sup>3</sup> F. E. BOLTON,<sup>2</sup> H. J. BOOTSMA,<sup>4</sup>† R. J. L. WILLEMS,<sup>4</sup> R. URWIN,<sup>1</sup> AND M. C. J. MAIDEN<sup>1</sup>\*



FIG. 1. Chromesomal locations of MLST loci. The positions of the seven loci are shown on a map of the C, *jejmi* chromesome derived from the genome sequence of isolate NCTC 11168 (http://www.sangera.cuk/ProjectsC, *jejmi*). The 15(4).431-bg genome is divided into 10 segments (indicated on the inner circle), with each segment representing 164,148 bp.

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### Task 1.4 Distribution of *Campylobacter* sub-types in EU broiler production

- •Up to 500 isolates will be subject to MLST
  •Isolates from 2 year longitudinal study (UK and Spain)
  - •Flock and environmental
  - •Seasonality
- •Isolates from Task 1.1 Risk factors for *Campylobacter* colonization in broilers



## Task 1.5 Modelling in-house colon. of birds in relation to envir. and bird welfare Task leader: Steven Rushton, UNEW

Participants: ULIV

No	Deliverable	Month
1.5.1	Quantitative assessment of the relative significance of risk factors in the study countries	40
1.5.2	A pathway model which defines the interactions between risk factors leading to colonization	42



## The Campylobacter problem

- Broilers become colonised ca 21-30 days after establishment
- Many biological, epidemiological and management processes change during this period
- The processes also interact
- A multi-factorial problem of interacting processes which has to be deconstructed to understand the epidemiology and lead to effective control





#### Multifactorial nature of Campylobacter colonisation of chickens



# Colonisation as a longitudinal process

- From establishment chicken maternal antibodies decline immunological status changes
- Chick diet changes and coccidostats alter gut flora
- Chickens grow and become more densely packed
- They are subject to repeated challenges from internal and external environmental sources
- Need investigation of the time-line of all chicken 'events' and their colonisation status



## Rationale for study

- Capture change in environment, chicken management, risk factors and epidemiological status through time
- Longitudinal analysis of risk factors (mixed effect modelling, survival/event analysis)
- Analysis of the interactions between risk factors and their impacts on colonisation (structural equation modelling)









World-class interdisciplinary research towards the control of zoonotic infections

#### Veterinary Training and Research Initiative - VTRI



'Food-borne' zoonotic pathogens: transmission, pathogen evolution and control - a programme of training and research

















## WP2 Intervention strategies

- 3 approaches for intervention in primary production:
- The effect of fly screens
- The use of bacteriophages
- Vaccine development



## WP2 Intervention strategies

- Jaap Wagenaar, UU
- Other participants: all except NVI, DIA, UNEW, NVRI



# Task 2.1 Fly screens add-on to biosecurity

### Task leader: Birthe Hald, DTU-VET

### Participants: DTU-FOOD, ULIV, CSA

No	Deliverable	Month
2.1.1	List of study farms and control farms to be visited selected from list of Task 1.1	12
2.1.2	List of farms consenting to participate	13
2.1.3	Report for each study farm to approve biosecurity level and plan for mounting of fly screens	14
2.1.4	Fly screens delivered on farms	15
2.1.5	Logbooks filled in and collected	39
2.1.6	Database with Campylobacter results of all farms in Task 2.1	40
2.1.7	Paper on the effect of fly control in UK and Spain	44

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### Task 2.1 Fly screens add-on to biosecurity

- 2.1.1 Identification and recruitment of study and control farms
- 2.1.2 Establisement of fly screens at each study farm
- 2.1.3 Daily management of study farms
- 2.1.4 Testing of study farms and control farms for Campylobacter


- 2.1.1 Identification and recruitment of study and control farms
  - □ Sufficient degree of biosecurity already
  - Similarity among farms in management, standard and type of ventilation system
  - Ideally 'One house farms'
  - □ Locations within a limited area ('250 by 250 km') in each country
  - □ 6 study houses and 6 control houses per country



#### 2.1.2 Establisement of fly screens at each study farm

- Visit and inspection to select farms
- □ A report stating the measures needed
- A 'contract' with the farmer of 'what to do'
- □ DTU responsible for the actual measures for the screens
  - Vestergard Frandsen
  - Ruff Lowman
  - Farmer and local employees



### 2.1.3 Daily management of study farms

- Management guidelines (according to EPIG)
- □ Aggreed routine
- Logbook concerning deviations, farmer's fill out
- Surveillance for compliance to aggrements and for functionality of screens
  - Local responsible (appointed by ULIV and CSA)
  - Task leader



- 2.1.4 Testing of study farms and control farms for Campylobacter
  - □ 2 years, 7-8 flocks per farm (study and control)
  - Sock samples, PCR
    - April to November: 4 sock samplings/flock,
      - □ Sampling day 0, 14, 25, 36 ??? For discussion
    - December to March: 1 sampling per flock (at first batch's slaughter day)

Air flow





## Task 2.2 Phage therapy

Task leader: Peter Willemsen, CVI-LEI
Participants: UMinho, DTU

No	Deliverable	Month
2.2.1	Collection of phages to be used for therapy to control Campylobacter	24
2.2.2	Paper on the efficacy and effectiveness of the use of phages to combat Campylobacter in field trials	48
2.2.3	Paper on the effectiveness of phage therapy	48



#### Central Veterinary Institute of Wageningen UR



#### Two locations in Lelystad



- National Reference lab for notifiable animal diseases
- Statutory research tasks
- Int. Reference lab for several animal diseases
- High-containment facilities





### Scheme Workplan Phage Therapy (7 subtasks)

#### PREMISES

- Proof of principle 3 Log reduction (Wagenaar et al., 2005)
- Temporary reduction
- Need for broader host-range

#### Scheme Workplan Phage Therapy

#### **BETTER CAMPY-PHAGES**

- Combination of sets
- New Phages

#### THERAPY PROTOCOL

- Lab conditions
- Delivery, Dose, Timing
- Efficacy

#### FIELD TRIAL

SME (Portugal)

Month 24

Month 36

Month 48

SEVIEWINGANINE



### Task 2.3 Vaccination

Task leader: Jaap Wagenaar, UU
Participants: CVI-LEI

No	Deliverable	Month
2.3.1	Identification of immune response against <i>C. jejuni</i> subunit vaccines	24
2.3.2	Identification of immune response against <i>C. jejuni</i> whole cell vaccines	24
2.3.3	Protection against <i>C. jejuni</i> challenge after vaccination with <i>C. jejuni</i> subunit vaccines	36
2.3.4	Protection against <i>C. jejuni</i> challenge after vaccination with <i>C. jejuni</i> killed whole cell vaccines	48



### Task 2.3 Vaccination

- Development of new generation of vaccines based upon Toll-like receptor activation
- Campylobacter flagellin does not activate TLR5
- Modified Campy-flagellin (expressed protein) did activate TLR5
- Role of glycosylation: are sugars at the surface of the antigen essential for a proper immune response?
- Salmonella as vector: collaboration with a Polish research group.



## Task 2.3 Vaccination

- Aim: to use an in ovo vaccine approach
- Interference with maternal antibodies?
   Use of eggs/chickens from a Campylobacter free broiler-parent flock
- Adjuvantia
- Close collaboration with CamVac (Jeffrey Hoorfar)



# WP3 Development of detection methods and monitoring regimes

- Laurids Siig Christensen, DTU
- Other participants: NVRI



# Task 3.1 Development of methods of quantification of Camp. in air

- Task leader: Laurids Siig Christensen, DTU
- Participants:

No	Deliverable	Month
3.1.1	Establishment of methods of quantification of airborne Campylobacter	24
3.1.2	Definition of level of sensitivity	24
3.1.3	Publication on quantities of airborne Campylobacter	24
3.1.4	Identification of a suitable semi-automated technology allowing semi-continuous monitoring of airborne Campylobacter	24



# Task 3.2 Feasibility of real-time monitoring of Camp. in broiler flocks

- Task leader: Laurids Siig Christensen, DTU
- Participants: NVRI

No	Deliverable	Month
3.2.1	Knowledge of the airborne particle size distribution under various farming conditions	36
3.2.2	Knowledge of the ratio of airborne particles and Campylobacter under various farming conditions	48



## Task 3.3 Report on future research needs

- Task leader: Laurids Siig Christensen, DTU
- Participants:

No	Deliverable	Month
3.3.1	Report on future research needs regarding diagnostic tools to detect Campylobacter in primary poultry production	48



## WP5 From science to industry

- Mogens Madsen, DIA
- Other participants: all except CVI-LEI, UMinho, UNEW



# Task 5.1 Best Practice Manual for production of Camp-free chickens

- Task leader: Mogens Madsen, DIA
- Participants: all other participants in WP5

No	Deliverable	Month
5.1.1	Best Practice Manual	44



Task 5.2 Specific targeted learning programmes for proficiency in implementing the "BPM for production of Camp-free chickens"

- Task leader: Mogens Madsen, DIA
- Participants: DTU, all other participants in WP5

No	Deliverable	Month
5.2.1	Plan for distribution of the final E-learning product	42
5.2.2	E-learning programme	48



### Task 5.3 Voluntary Certification Programme

- Task leader: Mogens Madsen, DIA
- Participants: all other participants in WP5

No	Deliverable	Month
5.3.1	Voluntary Certification Programme	48



## Meeting of the Advisory Board

- Select chairman
- Evaluate progress
- Advise the Executive Board on need for adjustments
- Report to all of us



# WP4 Risk assessment and economics

- Hanne Rosenquist, DTU
- Other participants: all except DIA, UMinho, UNEW



## Milestones/Deliverables first

year





### Task 4.1 Risk assessment

- Task leader: Maarten Nauta, DTU
- Participants:

No	Deliverable	Month
4.1.1	Research paper on the QRA model	46



## Task 4.1 Risk assessment

- Who?
- What?
  - a QMRA estimating the relative risk-reducing effect of selected interventions at farm in different geographical regions in Europe
- How?
  - Development of RA model for farm level for different regions in Europe
  - Integrating model for farm with models for the remaining food chain
- Results?
  - a food chain RA model which links the farm stage, with broiler flocks, to risks consequential to broiler meat consumption
  - □ Effect of on-farm interventions on risk of campylobacteriosis



# Task 4.2 Data collection and compilation

- Task leader: Hanne Rosenquist, DTU
- Participants: CVI-LEI, NVI, ULIV, UU, CSA, NVRI

No	Deliverable	Month
4.2.1	Report on data collected for risk assessment and economics	46



# Task 4.2 Data collection and compilation

### Who?

- DTU and WUR-LEI
- What?
  - Definition and protocols for data collection
- How?
  - development of spreadsheets
  - Workshop
  - Results task 1.1
  - Costs of the various interventions
- Results?
  - Definition of different bio security packages
  - Cost and cost utility of different packages



### Task 4.3 Economics

Task leader: Ron Bergevoet, CVI-LEI

### Participants:

No	Deliverable	Month
4.3.1	Research paper on the cost-effectiveness of interventions in different regions in Europe	48



## Task 4.3 Economics

- Who?
  WUR-LEI
- What?
  - Identification of costs in different regions
  - Baseline data from Farm Accountancy Data Network
- Results?
  - Economic model



Task 4.4 Cost-effectiveness on interventions at farm and comparison with interventions post farm

- Task leader: Maarten Nauta, DTU
- Participants: CVI-LEI

No	Deliverable	Month
4.4.1	Research paper on integration of risk assessment and economy	46



Task 4.4 Cost-effectiveness on interventions at farm and comparison with interventions post farm

- Integration results task 4.2 and 4.3
- Cost-effectiveness of different interventions in different regions



### Task 4.5 Future data needs

Task leader: Maarten Nauta, DTU
Participants: CVI-LEI

No	Deliverable	Month
4.5.1	Report on future data needs	48
4.4.1	Report on major outcome of WP4	48



## WP6 Management

- Merete Hofshagen, NVI
- Other participants: all



## Coordinator

- Responsible for legal, contractual, ethical, financial and administrative management
- Chairman of the Executive Board
- Responsible for the scientific direction and reporting of the project
- Will monitor the scientific developments, technical activities and quality of the Deliverables
- Convene and chair meetings of the General Assembly, /Executive Board, unless decided otherwise
- At the first meeting of the General Assembly, a Deputy Coordinator will be selected among the WP leaders


## Coordinator – cont.

In particular, the Coordinator shall be responsible for:

- monitoring the Participants compliance with their obligations
- collecting, reviewing and submitting reports and other deliverables (including to the European Commission)
- transmitting documents and information, including copies of Accession documents and changes of contact information to and between Work Package leaders, as appropriate, and any other Participants concerned
- administering the Community financial contribution and fulfilling the financial tasks (see Grant Agreement)
- providing, upon request, the Participants with official copies or originals of documents

being the (sole) contact point between the Consortium and the EC

- If the Coordinator fails in these tasks, the General Assembly may propose to the Commission that a new Coordinator be appointed.
- The Coordinator shall not act or to make legally binding declarations on behalf of any other Party or enlarge her role beyond the tasks specified in the Grant Agreement



## Task 6.1 Consortium Agreement signed

- Task leader: Merete Hofshagen, NVI
- Participants: all

No	Deliverable	Month
6.1.1	The Consortium Agreement signed by all participants	0



## Task 6.2 Day-to-day management

- Task leader: Merete Hofshagen, NVI
- Participants: all

No	Deliverable	Month
6.2.1	Management support team appointed	2



Frode A Granås

Head of Economy Dep, NVI

Danica Grahek-Ogden

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## Management Support Team

- The Project assistant (PA) and Financial Assistant (FA)
  - □ Hired by the Coordinator
  - Assist in the daily management and in the overall administrative support to the participants.
- PA
  - Organise meetings, collection and distribution of internal reports, results and deliverables, assisting with preparation of internal scientific reports from WP leaders, deadline monitoring, updating contact information from participants, updating web page, overall administrative support to the Coordinator, etc.
- FA
  - Oversee the project finances, payment management, collection and control of cost statements from participants, financial and management activity reports, justification of resources, etc.



## Task 6.3 Establish and maintain the Project web site

- Task leader: Merete Hofshagen, NVI
- Participants: all

No	Deliverable	Month
6.3.1	The Project web site established	4



# Task 6.4 Establish and maintain the Communication and Dissemination Plan

- Task leader: Merete Hofshagen, NVI
- Participants: all

No	Deliverable	Month
6.4.1	Plan for the use and dissemination of foreground presented	50



#### Task 6.5 Meetings

Task leader: Merete Hofshagen, NVI

#### Participants: all

No	Deliverable	Month
6.5.1	Reports of project's meetings	2, 14, 32, 45



### Task 6.5 Reporting to the EC

- Task leader: Merete Hofshagen, NVI
- Participants: all

No	Deliverable	Month
6.6.1	Regular reports to the European Commission	20, 38, 50
6.6.2	Report on awareness and wider societal implications	50



## Executive board

- Coordinator and the WP Leaders Meetings at least quarterly (telephone, web)
- The Executive Board shall
  - □ execute and implement decisions of the General Assembly
  - □ monitor the implementation of the Project
  - □ prepare meetings of the General Assembly
  - collect information at least every 6 months on the progress of the Project, if necessary, propose modifications to the Plan to the General Assembly
  - initiate, coordinate, and organise the Work Packages
  - support the Coordinator in preparing meetings with the European Commission
  - □ prepare press releases and joint publications
- Minutes of Executive Board meetings distributed to the General Assembly
- Advise on ways to rearrange tasks and budgets in case of abolished tasks as a result of a decision of the General Assembly



# General Assembly

- One representative per participating institution Meeting at least once a year
- Propose and decide in accordance with the Consortium Agreement
- Proposals from Executive Board shall be considered and decided upon
- The following decisions shall be taken by the General Assembly:
  - □ Content, finances and intellectual property rights
  - □ Proposals for changes to Annex I to be agreed by the European Commission
  - □ Changes to the Consortium Plan (including budget)
  - Withdrawals from and additions to Background to be attached to the Consortium Agreement
  - □ First meeting: select Deputy Coordinator
  - □ Evolution of the Consortium
    - New Participant, withdrawal of Participant, Declaration of a Participant to be a Defaulting Participant
  - □ Proposal to the European Commission for a change of the Coordinator
  - □ Suspension of all or part of the Project
  - □ Termination of the Project and/or the Consortium Agreement



## **Report from Advisory Board**

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# Other matters

#### Logo

Suggestions before 30 June

Web pages

□ Anyone with good ideas – nice (cheap) solutions?

#### Meetings

□ Web-conference system – anyone?

- □ Connect to other meetings?
  - Food Micro 2012, 2014
  - CHRO 2011 (Canada), 2013 (UK?)

Anything else??



#### Thanks and have a safe journey home!!