2016년 공식통계 품질관련 국제회의 참가 결과
(Q2016 – European Conference on Quality in Official Statistics)

2016. 7.

통계청
통계개발원

Ⅰ 출장개요

1. 출장 배경 및 목적

○ 공식통계 품질관련 국제회의는 2년마다 유럽을 중심으로 최근 연구 및 적용되고 있는 국가통계 기법, 실무사례 등의 공유하는 장임

  - 현재 세계에서는 공식통계(official statistics)의 품질 개선에 관련된 주요 이슈(조사방법론, 행정자료, 빅데이터 등의 다양한 출처 자료 처리 및 활용, 응답자 부담 증가 등)에 대해 활발한 연구 및 논의가 지속적으로 진행됨

○ 현재 통계청은 조사방법론의 선진화, 행정자료 이용, 빅데이터 활용 등을 핵심사업으로 진행 중임

  - 유럽을 중심으로 각국의 공식통계의 품질 개선, 조사방법론, 다양한 출처 자료 처리 방법 등에 관한 연구동향을 파악하여 향후 연구과 제 발굴 및 국가통계 개발·개선 업무에 활용하고자 함

○ 공식통계와 관련한 주요 분야에 대해 각국 통계전문가들이 최근 선진 방법론을 토의하는 자리로 다양한 방법론 연구를 위한 좋은 기회 확보

○ 주제 분야가 '공식(국가)통계'로 한정된 국제회의인 만큼 각국 공식통계 실무자와의 네트워킹, 최근 이슈에 직접적인 참여와 follow-up 가능

○ 조사방법론 개발·연구를 위한 정보공유 및 연구동향 파악

  - 공식통계 품질개선, 빅데이터, 자료연계, 행정자료 활용, 빅데이터, 표본오차 및 비표본오차 등 관련 세션 참가

  - 통계청 핵심사업인 조사방법론의 선진화, 행정자료 및 빅데이터 활용 등에 관련된 선진연구동향 파악

  - 공식통계 생산방식에서 최신 조사방법론의 혁신적인 방법과 기법 습득

2. 출장 내용

○ 참가회의

- Q2016[*] - European Conference on Quality in Official Statistics
  * 2001년 제1회 회의 이후 2004년부터 2년 주기로 개최, 이번 회의는 제8차 회의임

- 주관: 유럽 통계청(Eurostat) / 스페인 통계청(INE)

- 일정: 2014년 5월 31일(화) ~ 6월 3일(금) / 4일간[**]
  ** 단기훈련(5.31.)와 세션발표(6.1.~6.2.)으로 구성

- 장소: 스페인, 마드리드(Circulo de Bellas Artes)

○ 출장자 및 출장기간

- 출장자: 조사연구실 최재혁 사무관

- 출장기간 : 2016년 5월 30일(월) ~ 2016년 6월 5일(일) / 5박 7일

Ⅱ 주요 내용

✍ Li-Chun Zhang, University of southampton & Statistics Norway

○ 통계생산방식의 변화

- 통계생산방식의 패러다임이 센서스/표본조사에서 행정자료 및 빅데이터 등의 다양한 원천자료를 결합하는 방식으로 변화 중임

- 조사비용 및 응답부담 감소, 긴 시간 소요되는 통계작성의 효율성 이득

- 잠재적으로 새롭거나 자세한 소지역 통계 및 종단분석에 이득

○ 다양한 출처자료를 이용한 통계의 관련성 품질보장

- 다양한 출처자료의 구조변화, 연계, 자료통합 등을 포괄할 수 있는 모형을 기반으로 하여 통합자료에 대한 일관성 있는 총오차 프레임워크 논의

- 행정자료를 이용한 통계생산에서 강조되는 품질지표와 품질측정 방안 검토

○ 다양한 출처자료를 이용한 통계생산방식

- 정확연계가 불가능한(공통의 키변수가 없는 경우) 분리된 자료들의 통계적 매칭(확률적 매칭) 기법 논의

- 자료정비 및 일치성을 확보하기 위한 자료입력과 자료연계단계에서 부조화하고 타당하지 않는 측정결과의 최적의 조정방법 논의

○ 다양한 행정자료, 빅데이터, 등록기반자료 등을 이용한 검토

- 다양한 출처자료를 이용한 통계결과를 정확성, 일치성, 접근성, 관련성, 비교가능성, 시의성 등의 품질지표별로 검토

✍ Wayne R. Smith, Statistics Canada

○ 공통의 변화

- 법적체계의 현대화: 국가통계시스템의 조직화, 연방정부 부처 간의 조직화, 국가통계기관의 전문적 독립화

- 많은 자료의 빠른 접근 요구: 품질 보장 필요, 관계자들의 기대감 증가

- 설계/미설계 자료: 응답률 감소, 행정자료와 빅데이터(미설계 자료, 미정제 자료 등)의 증가, 실무단계에서 이미 진행 중

- 전략적 동반자: 정보 생산 필요, 여러 분야의 이득 가능, 관리 구조와 법적 체계 확립

- 등록기반 센서스: 전세계적 환경 변화, 행정기반 등록자료 증가, 국제비교 가능성 높음

- 지리적 정보: 통계와 지역의 연계 가능, 소지역 단위의 지형도 보급 증가, 자료공개 위험 증가

○ 공통의 목표: 공식통계의 품질

- 핵심 원칙: 재구성된 국가통계연합위원회(1995년), 이행 지침 준수

- 품질체계 개정: Generic National Quality Assurance(UNECE), Recommendations on good statistical practice(OECD), Code of Practice second revision(ES), Quality Assurance Framework 2016 revision(Statistics Canada)

- 통계결과의 승인: 정확하고 일관성 있는 분석 필요, 모든 과정(단계)에서의 품질 보장과 최종 결과의 승인 필요, 신뢰성 확보

- 품질 접근: 측정 불가능한 것은 생산 불가, 투명성과 신뢰성 보장, 품질 증빙 및 품질체계 지수 필요

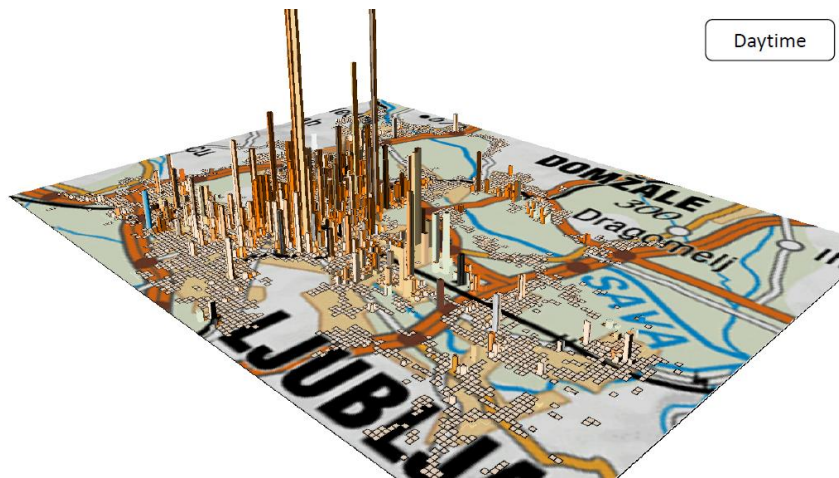✍ Genovefa Ruzic, Statistical Office of the Republic of Slovenia

○ 빅데이터의 기회와 도전

- 빅데이터의 기회: 시의성, 신뢰성, 타당성 등의 개선, 응답부담과 비용의 감소 효과

- 빅데이터의 도전: 자료 접근, 비밀보장 및 윤리 문제, 통계방법론적 의문, 기술력과 역량, 통계품질체계의 접목

○ 품질측정

- 전통방식의 조사자료와 행정기반 자료는 가능, 빅데이터는 고민 필요

○ 빅데이터의 예제1: 휴대폰 사용에 대한 빅데이터 분석
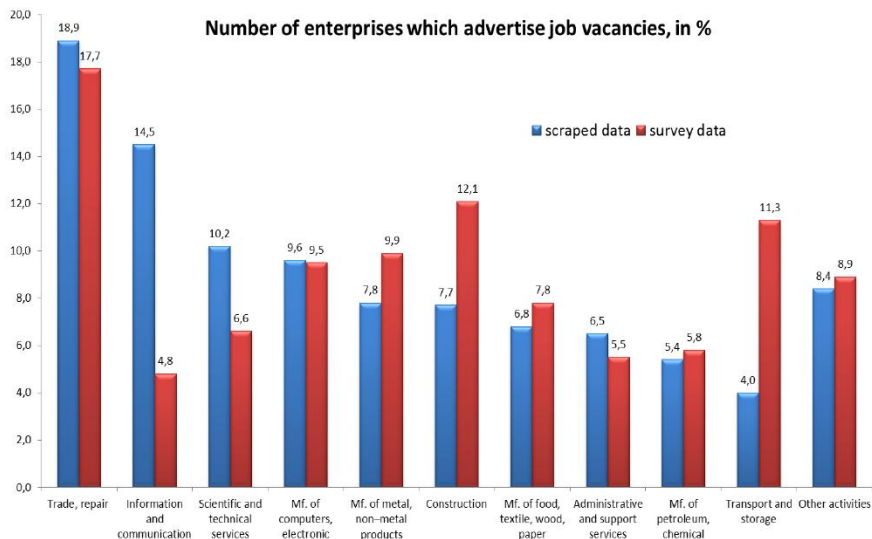
○ 제도적 환경: 빅데이터 접근

  - 주요 이슈: 데이터의 소유권, 접근방법, 사용권한, 법적고민, 절대적 대체자인지 또는 동반자적 역할인지 고민

○ 빅데이터 활용과정

  - 필요 요건: 시점 이동, 새로운 지식과 역량

  - 빅데이터는 어떻게 획득할 것인가?

○ 빅데이터의 예제2

  - 구직광고 기업체 수의 빅데이터 분석과 조사자료 분석과의 비교

  - 뉴스 탐색

✍ Eduasrdo Barredo, Eurostat

○ 데이터생성단계에서의 관련 기초자료 선택방법, 기초자료의 최적 결합방법, 품질유지방법에 대한 논의

○ 공식통계의 데이터 생산자/이용자가 필요한 기술 및 노하우 논의

○ 최신의 글로벌 통계 및 개발 의제가 요구에 맞게 설정됐는지 여부, 마이크로자료 및 자료개요의 교류와 같은 국가 간 체계와의 중요성

○ 모형기반 추정의 공식통계에 사용 가능성 검토, 정책 결정자가 활용 가능한 공식통계로서의 역할 여부 논의

○ 통계와 사회 간의 상호작용의 특성 파악(기회, 위험, 리스크), 공식통계 사용자(정책 결정자, 국민)가 지표의 명확성의 착오[*]를 해결하는 방법 논의

   * 지표의 명확성의 착오가 있다해도 통계와 지표가 비객관적이고 가치없는 것은 아님

☐ Quality Assurance of administrative Data - a proportionate approach

✍ Penny Babb, UK Statistics Authority

○ 통계생산자의 근본적 문제

- 데이터가 공식통계를 생산하기에 신뢰성 및 적정성이 충분한지 판단하는 방법

- 통계에 적절한 데이터 품질에 대해 이용자가 인식 필요 여부

○ 영국 행정자료의 문제: 잉글랜드와 웨일즈의 경찰청 범죄기록

- 내부고발자에 따르면 경찰청 기록의 오류가 존재

- 매년 80만건 이상의 범죄기록이 누락(전체 범죄의 20% 정도)

○ 새로운 규제 기준: 행정자료의 품질보장(행정자료를 이용한 통계 생산단계에서 요구)

- 품질보장에 대한 판정 설명, 제공/생산 이유 및 규제이행 여부 증빙

- 리뷰 등을 이용하여 품질보장 준비에 대한 내부 검토 증빙

○ 데이터 품질을 위한 준비

- 컨텐츠 구성 및 행정자료 수집 → 자료 제공 파트너와의 협의 → 품질보장 원칙 및 기준, 제공자 체크포인트 등 확인 → 생산자의 품질보장 조사 및 기록

○ 데이터 품질보장 수준 결정

- 품질보장 준비에 대한 조사 및 품질보장 기록(기본 품질보장 → 품질보장 강화 → 종합적 품질보장)

- 자료사용의 적정성 판단(실용성과 비례성*)

  * 통계품질에 영향을 미치는 데이터에서 발생하는 품질 이슈 고려, 통계서비스 상의

| Session2 | Bid Data and Official Statistics: Challenges and Opportunities |

☐ Big data and the integrated production of official statistics

✍ Anton Orn Karlsson, Statistics Iceland

○ 빅데이터의 정의: 초대규모 자료, 미정제자료, 자연의 자료

  - 3V's: 용량, 속도, 다양성

  - 전통적인 통계생산방식이나 분석방법은 적절하지 않는 자료

  - 빅데이터에 맞는 대안적 통계생산방식이나 분석방법이 필요

○ 자료처리방법

  - 직접처리방법: 각 역영/통계에 맞는 특별한 생산방식으로 처리

  - 통합처리방법: 다른 영역 간을 전용할 수 있는 상호생산과정을 조화롭게 구성하는 방법

  - 빅데이터 처리방법: 직접처리방법과 통계생산과정을 결합하는 방법 (Scanner 자료, DB자료 등)

○ 빅데이터의 도전

  - 빅데이터 처리는 직접처리방법의 의존도가 높아질 가능성 존재

  - 빅데이터는 통계생산의 기본 원천자료보다 큐모가 큼

○ 빅데이터의 처리방법 예제

  ① 사회조사를 이용한 가중치 계산 및 적용

  ② 무작위방법을 통한 결측대체방법, 재분류방법

  ③ 회귀나무를 이용한 분석(소지역 추정 등)

Session3	Business Register

☐ Quality Improvement of the EuroGroups Register

✍ Amerigo Liotti, Eurostat

○ EuroGroups Register(EGR)

- 유럽연합 내 다국적 통계목적의 BR

- 각 국의 모집단 프레임을 조정하여 구성

- EFTA 또는 EURO 내 법적 기업체를 모두 포함하는 경제정보

- 각 국의 BR(NSBR)의 마이크로데이터를 결합하여 작성하므로 NSBR에 의존적임

○ NSBR → EGR

- 의무항목(35개): 83% 항목 작성, 75% 국가가 80% 이상 항목 작성·제출

- 부가항목(20개): 47% 항목 작성, 50% 국가가 50% 이상 항목 작성·제출

- 글로벌 기업통계 작성 가능, 통계생산 일치성 및 효율성 증가

- 품질개선 필요 → 자료품질프로그램 도입

○ EGR 품질 개선

- NSBR 작성단계에서 방법론 일치 및 품질 확보, EGR단계에서 추가적인 개선

- NSBR의 품질개선단계: 품질기준 설정 → 품질 모니터링 → 품질 평가 → 품질 개선

○ 향후계획

- 현재 모니터링과 평가 단계 진행 중

- 2016년까지 품질 프로그램 진행, 2017년 품질 개선방안 작성

Session4 Multi-Source Statistics

☐ Quality assessment of multi-source statistical processes
✍ Giovanna Brancato, Istat, Italian National Statistical Institue

○ 이탈리아 통계청의 품질보장 프로그램

- 직접방법: 품질보장 자체진단 프로그램(매년 14단계 실시)

- 간접방법: 이탈리아 통계청 품질보고 시스템에서 표준품질지표 분석

○ 품질보장 자체진단 프로그램

- 품질 가이드라인 원칙 준수

- 통계생산 과정의 자발적 확인

- 질문지에 의한 품질진단

- 개선사항 후속조치

○ 품질보고 시스템에서 표준품질지표 분석 예제

- 사업체, 가구, 개인 응답에 대한 분석: 자료 오차률, 무응답, 시의성 (개선, 유지, 악화) 분석

○ 행정자료 기반 통계의 품질모형 개발 진행결과

- 행정자료를 이용한 통계생산과정 단계의 품질진단 질문 설계

- 모든 상황에 대한 자료사용 적정성 판단기준 수립

- 많은 자료가 통합된 행정자료의 복잡성 파악

- 혼합자료에 대한 품질진단 질문 설계

○ 행정자료 기반 통계의 품질모형 개발 계획

- 혼합자료에 대한 품질진단 질문 테스트

- 행정자료의 품질보고 시스템에서 표준품질지표 분석방법 수립

- 모든 종류의 통계생산방식으로 품질진단 확장

☐　Quality evaluation for a statistical register: the Italian FRAME-SBS

✍ Orietta, Istat, Italian National Statistical Institue

○ 연구배경

- 이탈리아 통계청은 2013년 기업체 경제계정 연간추정에 대해 다출처 통계등록자료(FRAME-SBS)를 개발함

- FRAME-SBS는 행정자료와 조사자료의 마이크로데이터를 결합함

- 2012년 기준 이후로 경제총조사와 같은 자료로 사용함

○ FRAME-SBS 문제점: 품질보장 프레임워크 개발 필요

- 등록생산(자료입력, 자료처리과정, 자료생성)의 모든 과정에 대해 품질을 평가, 보고, 모니터링 필요

- 자료생산과정에서 데이터에 영향을 줄 수 있는 잠재적 오차/오류의 근원 확인 필요

○ 품질보장 프레임워크 3단계

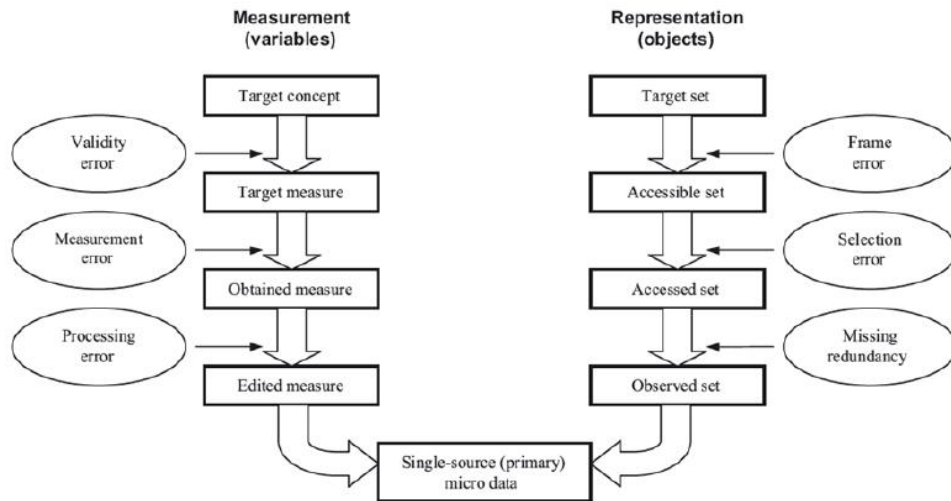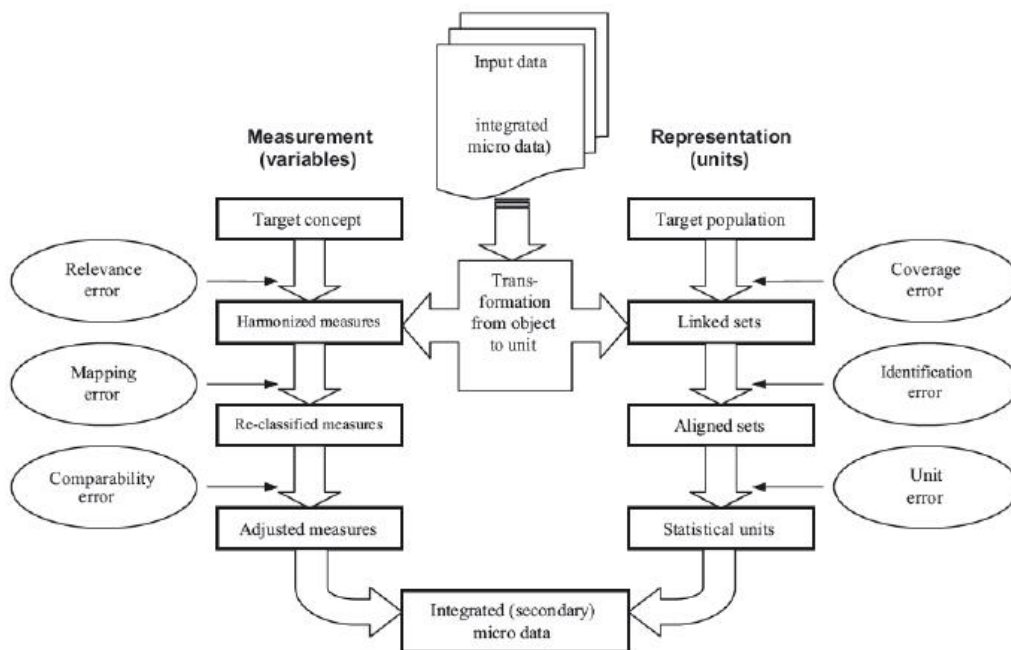- FRAME-SBS 생산과정 흐름 작성 → 각 과정에서 잠재적 오차/오류 확인 → 각 잠재적 오차/오류에 대한 품질지표 개발

○ 잠재적 오차/오류 확인

- 품질평가에 대한 2단계 프레임워크: 다양한 행정자료와 통계자료를 결합하여 통계를 작성 할 때 발생할 수 있는 잠재적 오차/오류 확인

  ① 행정자료 처리: 측정오차, 처리오차, 선택오차, 결측 및 중복 등이 주로 발생

② 행정자료와 조사자료 결합: 관련성 오류, 연계 오류, 비교성 오류, 포함오차 등이 주로 발생

<행정자료 처리과정의 잠재적 오차/오류 발생>

<행정자료와 조사자료 결합과정의 잠재적 오차/오류 발생>

○ 품질지표 정의 및 향후목표

- 품질지표는 측정변수와 조사단위 측면을 모두 고려해야 하고 양적
지표와 질적지표 모두 필요

- 보고목적의 품질보고체계 개발 필요

- 행정자료 중 낮은 포함률을 가지는 변수에 대한 추정의 정확도를 평가하는 방법 개발 필요

Session6 | **Administrative Data: Topic Oriented**

☐ Evaluating the potential for moving away from a traditional census

✍ Becky Tinsley, ONS

○ Beyond 2011 프로그램

- 향후 소지역 모집단과 인구사회통계를 제공하는 최적의 방법을 개발하는 프로그램(잉글랜드와 웨일즈): 2014년 권고(안) 작성

- 센서스 생산방식 변경: 주기 10년, 행정자료와 대규모 연간 조사자료를 결합하여 생산

○ 소지역 모집단 및 인구사회통계 작성 권고(안)

- 2021년 모든 가구와 기업체 온라인센서스 실시

- 2021년 센서스 결과의 가치향상을 위해 행정자료와 조사자료 사용을 권장하고 센서스 주기 사이의 연간통계를 개선

- 요구하는 모든 모집단통계 자료, 행정자료, 연간조사 자료를 제공

○ 행정자료를 이용한 센서스

- 2021년 센서스와 행정자료를 비교하여 행정자료 센서스 가능성 검토(2023년 권고(안) 작성 예정)

- 센서스 목표: 모집단 규모, 가구구조 분포, 가구 및 모집단 특성 파악

- 잠재적으로 행정자료 만을 이용하고자 하나, 완벽한 해결책은 불가능 할 것으로 예측(모집단의 1% 표본조사 필요)

- 행정자료와 조사자료의 결합에 대한 평가 필요

○ 2016년 연구계획

  - 각 세 단위의 소지역단위 모집단 추정

  - 행정자료를 이용한 모집단 추정방법 개선

  - 세금 원천징수자료와 정부수당자료를 이용한 소득 연구

Ⅲ 시사점

□ 유럽연합의 통계연구 및 생산방식 패러다임의 변화

○ 지속적으로 감소하는 응답률과 조사 예산 삭감 등의 조사환경의 악화 속에서 행정자료 활용에 대한 노력 표현

○ 빅데이터 등 행정자료와 등록자료에 대한 꾸준한 연구가 진행됨

  - 빅데이터, 행정자료로부터 얻은 개인적 성향 및 특화된 계층의 특성을 활용하여 소지역 추정 등에 보조변수로의 활용 가능성이 높음

  - 기존의 정책활용 뿐만 아니라 이용자도 만족시킬 수 있는 이용자 중심의 통계 생산에 활용할 수 있는 방법들은 고민하고 있음

□ 최신 정보통신기술을 활용한 자료 수집에 대한 연구 증가

○ 표본조사와 같은 전통조사 방식에서 벗어난 디지털 자료수집에 대한 연구가 활발

  - 유럽연합의 경우 행정통계 또는 빅데이터 등을 활용한 가공통계를 지향하는 분위기임

○ 스마트폰 및 GPS, 네트워크 시스템 등을 활용한 자료수집에 대한 연구가 활발하게 진행

  - 새로운 자료 소스의 활용도는 높으나 모집단 대표성 및 자료 수집의 일관성 부족에 대한 지적이 많고 그에 대한 연구는 초기단계임

<별첨> 세션 프로그램

Programme Structure Q2016

	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna

Day 1 - 01.06.2016

Time	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
09:00-10:30	Opening - Plenary Session 1 Welcome adress: Gregorio Izquierdo, President of INE- Spain; Miguel De Castro, Director INE-Spain; Mariana Kotzeva, Deputy Director General, Eurostat Opening Keynote Speech: "Producing Good Quality Official Statistics: A Shared Experience" Wayne Smith, Chief Statistician, Statistics Canada				
10:30-11.00	Coffee Break				
11:00-12:32	33 - SPECIAL SESSION: Peer Reviews: a tool to enhance trust in European Statistics?	1- Enterprise Architecture in Statistical Offices	2 - Quality improvement methods in Household Surveys	3 - Quality Challenges in Social Statistics: preserving privacy and other issues	4 - Administrative Data: Cross-Cutting Issues
12:30-14:00	Lunch				
13:10 - 13:55		Speed Talk Session 1	Speed Talk Session 2		
14:00-15:30	5 - Quality Management and Governance	34 - SPECIAL SESSION: Big Data and Official Statistics: Challenges and Opportunities	6 - Peer Review: Learning from countries' experiences	7 - Quality Indicators	8 - Integrated Production & Quality
15:30-16:00	Coffee break				
16:00-17:30	35 - SPECIAL SESSION: The Statistics Code of Practice for the ENP South countries – challenges for its implementation in the ENP South countries and for the development of the corresponding institutional framework	9 - Quality Management Systems 1	10 - Business Register	11- Models & Early Estimates	12 - Enhancing Statistical Literacy
17:30 - 18:30		Speed Talk Session 3	Speed Talk Session 4		

Day 2 - 02.06.2016

Time	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
09:30-11:00	13 - Coordination of Statistical System	36 - SPECIAL SESSION: Competence Management in Statistics	14 - Satisfying User's needs: Communication	15 - Methodology: Linkage and Modelling	16 - Quality Assessment & Audits
11:00-11:30	Coffee break				
11:30-13:00	17 - Quality Reporting	18 - Multi-Source Statistics	37 - SPECIAL SESSION: Governance and Coordination of the National Statistical Systems in the enlargement and ENP-East countries	19 - Human Resources Development: A Quality Culture	20 - Big Data Oriented Systems
13:00-14:30	Lunch				
14:30-16:00	21 - Administrative Data Systems	38 - SPECIAL SESSION: Synergies for Europe's Research Infrastructures in the Social Sciences and Official Statistics	22 - Macroeconomics	23 - Quality Management Systems 2	24 - Metadata Systems
16:00-16:30	Coffee Break				
16:30-17.30	Plenary Session 2– Keynote Speech: "Challenges of Quality Assurance for Big Data", Genoveva Ruzic , (Statistical Office of the Republic of Slovenia)				

Day 3 - 03.06.2016

Time	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
08:30-10:00	39 - SPECIAL SESSION: Quality of International Statistics: Statistics tailored to the International Sustainable Development Goals Agenda. The challenges for international statistics at global, national and local levels	25 - Methodology: Sampling/Non-Sampling Errors & Calibration	26 - Data Collection & Burden respondent	27 - Big Data & Web Scraping	28 - Integrated Production & Business Process Model
10:00-10:15	Coffee break				
10:15-11:30	40 - SPECIAL SESSION: Opportunities and challenges for quality of official statistics-the future of the ESS Code of Practice	29 - Data Collection: Cross-Cutting Issues	30 - Satisfying User's Needs: Dissemination	31 - Administrative Data: Topic Oriented	32 - Quality Management Systems 3
11:30-12:45	Closing - Plenary Session 3 Chair: Eduardo Barredo (Eurostat) Panelists: Walter Radermacher (Eurostat), Konrad Pesendorfer (Statistics Austria), Alfredo Cristobal (INE), Martti Hetemäki (ESGAB), Juan Peñalosa (Bank of Spain)				
12:45-13:15	Refreshments				

Day 1 - 1.6.2016

Time					
09:00-10:30	Opening - Plenary Session 1				

Opening - Plenary Session 1
Welcome address: Gregorio Izquierdo (INE), Miguel De Castro (INE), Mariana Kotzeva (Eurostat)

Producing Good Quality Official Statistics: A Shared Experience
Opening Keynote Speech: Wayne Smith (Statistics Canada)

10:30-11:00 Coffee Break

11:00-12:30	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	33 - SPECIAL SESSION: Peer Reviews: A Tool to Enhance Trust in European Statistics?	1 - Enterprise Architecture in Statistical Offices	2 - Quality Improvement Methods in Household Surveys	3 - Quality Challenges in Social Statistics: Preserving Privacy and other Issues	4 - Administrative Data: Cross-Cutting Issues
	The peer review as a main driver for statistics Austria's strategy 2020 - Statistics Austria	Enterprise architecture in the Hungarian Central Statistical Office - Hungarian Central Statistical Office	Redeveloping the household budget survey - Statistics Norway	Available methods for privacy preserving record linkage on census scale data - City University London (UK), University Duisburg-Essen, (Germany)	The assurance of administrative data - a proportionate approach - UK Statistics Authority
	Trustworthiness, quality, value: What assurance do independent assessments of code-compliance give? - UK Statistics Authority	Governmental and statistical enterprise architecture frameworks as tools for modernizing the national statistical system - Statistics Finland	From output to input/output harmonisation in the EU LFS - Central Statistical Office of Poland	Developing longitudinal statistics on recipients of welfare benefits and their labour market position - Statistics Norway	When is administrative data enough to replace statistical information: A based on census comparison quality indicator - Statistics Portugal
	ESS peer reviews: An efficient means to implement the European Statistics Code of Practice - Eurostat, Luxembourg	Re-engineering and re-designing statistical production, modernisation; integrated production methods - Eurostat, Luxembourg	A standard tool for metadata quality assessment of external sources in the statistical production (QMETATOOL) - National Statistical Institute (INE), Spain	Do respondents answer differently in web survey than in face-to-face interview: Field work experiment from the European Health Interview Survey (EHIS) - National Institute of Public Health, Slovenia	Evaluating the quality of administrative data as input for official statistics - Statistics Denmark
		Statistics Catalonia: Towards total integration of statistics production - Statistical Institute of Catalonia (Idescat)	The use of regression models in labour market flow statistics - Eurostat, Luxembourg	The privacy protecting aspect of indirect questioning designs - Johannes Kepler University JKU, Austria	Mapping potential administrative data for statistics purposes - Statistic Portugal approach within public administration - Statistics Portugal
		Redesign of the statistical information system: Czech experience - Czech Statistical Office	Moving towards web data collection in household surveys - Statistics Finland	A latent class model to estimate labour cost from multi-source data - Istat, Italian National Statistical Institute	

12:30-14:00 Lunch

13:10-13:55		Speed Talk Session 1	Speed Talk Session 2		

14:00-15:30	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	5 - Quality Management and Governance	34 - SPECIAL SESSION: Big Data and Official Statistics: Challenges and Opportunities	6 - Peer Review: Learning from Countries' Experiences	7 - Quality Indicators	8 - Integrated Production and Quality
	Inter-organisational trust in the context of microdata exchange in the ESS - Eurostat, Luxembourg	Enhancing the foundation of official economic statistics with Big Data - U.S. Census Bureau	The experiences of Turkey as an enlargement country in the second round of peer review - Turkish Statistical Institute	Challenges and discoveries in developing quality indicators for the GSBPM - Turkstat, Statistics Canada, Istat	Measuring the quality of the Italian National Statistical System: Model and practice - Istat, Italian National Statistical Institute
	The commitment on confidence in European statistics as a means for enhancing quality of official statistics and efficiency of the national statistical system: Experience of the Czech Republic - Czech Statistical Office and CERGE-EI	Big Data and the integrated production of official statistics - Statistics Iceland	Peer review (2013-2015): Lessons learned, challenges and opportunities to the INE and the Spanish Statistical System - National Statistical Institute (INE), Spain	Quality indicators for the individual level – potential for the assessment of subgroups - Statistics Austria	Harmonisation at the ONS: Comparability of survey and administrative data in conjunction with European influences - Office for National Statistics, UK
	Governance structure of Turkish statistical system within the context of coordination mechanisms - Turkish Statistical Institute	Comparative assessment of three quality frameworks for statistics derived from Big Data: The case of Wikipedia page views and automatic identification systems - Eurostat, Luxembourg	Perspective of three different countries on peer review on ESCoP: Lessons learned, future challenges and common features on coordination role - Statistics Netherlands, ISTAT, Statistics Austria	Quality assessment of statistics in Eustat - Basque Statistics Institute - EUSTAT	Facing the challenge to increase quality while working more efficiently using Lean Operational Management and Lean Six Sigma at Statistics Netherlands - Statistics Netherlands
	Reforming information quality assurance at the National Institute of Statistics and Geography (INEGI) in Mexico - INEGI, Mexico	Measuring representativeness of internet data sources through linkage with register data - Poznań University of Economics and Business, Poland	The 2014/2015 European peer reviews – facilitating for statistical cooperation in the Nordic countries - Statistics Norway, Statistics Finland, Statistics Denmark	Agricultural administrative sources data quality: A proposal for standardized indicators - Istat, Italian National Statistical Institute	Validation in the ESS: A member state perspective - Federal Statistical Office (Destatis), Germany
	Coordinating migration related statistics and analyses at Statistics Norway – bridging users and producers - Statistics Norway		Second round of peer reviews – experience of (some experts at) Statistics Finland - Statistics Finland	Inclusive growth indicators on regional level - German Institute for Economic Research (DIW)	Integrated data processing system (EAR) - Hungarian Central Statistical Office

15:30-16:00 Coffee Break

16:00-17:30	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	35 - SPECIAL SESSION: The Statistics Code of Practice for the ENP South Countries	9 - Quality Management Systems 1	10 - Business Register	11 - Models & Early Estimates	12 - Enhancing Statistical Literacy
	The development of a cop for the ENP south countries - Eurostat, Luxembourg	Relevance and benefit of commercial quality improvement methodologies at Statistics Canada - Statistics Canada	Quality management of cross-border relations in the European system of interoperable statistical business registers - Statistics Austria	Using administrative data and model based estimation for improving Italian agriculture statistics - Istat, Italian National Statistical Institute	Figuring figures: Exploring Europeans' awareness of official economic statistics - University of Oviedo, Applied Economics, Spain
	PCBS experience in implementing European Code of Practice (CoP) - Palestinian Central Bureau of Statistics	Quality within ONS – providing a framework for statistical producers and assurance for our users - Office for National Statistics, UK	Quality improvement of the Eurogroups register - Eurostat, Luxembourg	Plausibility assessment of flash estimates of the income distribution - Eurostat, Luxembourg	A knowledge-driven society – challenges for Polish official statistics - Central Statistical Office of Poland
	The implementation of the code of practice: Main challenges: Morocco case - Statistics Directorate, High Commission for Planning, Morocco	How to cope with all those rules - Statistics Netherlands	Applying the generic statistical business process model (GSBPM) to the national business register; the Spanish experience - National Statistical Institute (INE), Spain	Models in official statistics - Statistics Netherlands	Statistical literacy portal as a marketing tool - National Statistical Institute (INE), Spain
	Implementation of Code of Practice for the ENP south countries- example: The access and use of administrative data in Morocco - High Commission for Planning, Morocco	A systematic approach to quality: The development and implementation of a quality management framework in the Central Statistics Office - Central Statistics Office, Ireland	Profiling: A new and better way to apprehend the globalization - Insee, France	GDP flash estimates: Sophistication through simplicity - Statistics Lithuania	European Master in Official Statistics in use: Short-term goals vs. Long-term vision - Eurostat, Luxembourg
	The statistics Code of Practice in Jordan: Challenges and future - Department of Statistics Jordan	How to increase quality in the central banks statistical business process? The experience of Banco de Portugal - Banco de Portugal	Dated – undated – outdated: The issue of time stamps and reference dates in the statistical business register - Federal Statistical Office (Destatis), Germany	Early estimates of environmental accounts (economy-wide material flow accounts) - Eurostat, Luxembourg	Statistical training as a factor in quality - National Statistical Institute (INE), Spain
	The implementation of the Code of Practice: The Algerian case in the context of using new technologies for the 2018 census - Office for National Statistics, Algeria				

17:35-18:20		Speed Talk Session 3	Speed Talk Session 4		

Day 2 - 2.6.2016

09:30-11:00

	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	13 - Coordination of Statistical System	36 - SPECIAL SESSION: Competence Management in Statistics	14 - Satisfying User's Needs: Communication	15 - Methodology: Linkage and Modelling	16 - Quality Assessment & Audits
	After the peer review – steps towards enhancing the co-ordination role of HCSO in the national statistical system of Hungary - Hungarian Central Statistical Office	A competency measurement model - Central Bank of Italy	Training for compilers of statistical releases - Statistics Finland	Improved maritime statistics with Big Data - Statistics Sweden	Introducing a framework for process quality in national statistical institutes - Istat, Italian National Statistical Institute
	NSS coordination: A tool or a fundamental principle? - National Statistical Institute (INE), Spain	Using a business architecture for identifying the competence needs of a statistical institute - Istat, Italian National Statistical Institute	How to tailor press work if quality standards of official statistics conflict with media interests - Federal Statistical Office (Destatis), Germany	Determining permanent residency status using registers in Estonia - Statistics Estonia	Minding the store: An internal audit program for demographic programs at the U.S. Census Bureau - U.S. Census Bureau
	Tools and methods for national coordination in national statistical system - Statistics Finland	The European statistical system's enterprise architecture reference framework and capability model - Eurostat, Luxembourg	Communication and quality in official statistics translated into English - Istat, Italian National Statistical Institute	Latent class multiple imputation for multiply observed variables in a combined dataset - Tilburg University	Statistical quality by design: Certification, culture and management - Statistics Netherlands
	Coordination of NSS – requirements and practice - Central Statistical Bureau of Latvia	The competencies for a register based statistical institute - Statistics Sweden	Communicating revisions and the timing of revisions to users - Federal Statistical Office (Destatis), Germany	Integration of multiple lists: Overview and proposal for linkage error adjusted estimators - Istat, Italian National Statistical Institute	Assessing quality control: Evaluating the quality audits - U.S. Census Bureau
	Strategic planning in a decentralised statistical system - the German example - Federal Statistical Office (Destatis), Germany			Exploring the statistical matching possibilities for the european quality of life survey - European Foundation for the Improvement of Living and Working Conditions (Eurofound)	A new process for assessing the quality of an output makes better quality statistics - Office for National Statistics, UK

11:00-11:30 — Coffee Break

11:30-13:00

	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	17 - Quality Reporting	18 - Multi-Source Statistics	37 - SPECIAL SESSION: Governance and Coordination of the National Statistical Systems in the Enlargement and ENP-East Countries	19 - Human Resources Development: A Quality Culture	20 - Big Data Oriented Systems
	ESS standard quality reporting implementation: The point of view of a national statistical institute - Istat, Italian National Statistical Institute	Quality assessment of multi-source statistical processes - Istat, Italian National Statistical Institute	Overview on the set-ups of the institutional framework in the enlargement and ENP east countries - Eurostat, Luxembourg	Development of expertise and multi-skillness at Statistics Finland - Statistics Finland	Assessment of risks in the use of Big Data sources for producing official statistics – results of a stakeholder survey - Eurostat, Luxembourg
	How to fulfill all demands for quality reporting - Statistics Denmark	Spain 2021. Why this census will have more quality than the previous one? - National Statistical Institute (INE), Spain	Governance structure of Turkish statistical system within the context of coordination mechanisms - Turkish Statistical Institute	Quality at any cost? – Examining the hard reality of job reductions while promoting the quality agenda. - Office for National Statistics, UK	Using huge amounts of road sensor data for official statistics - Statistics Netherlands
	Quality data sheets - Federal Statistical Office (Destatis), Germany	Designing the integration of register and survey data in earning statistics - Istat, Italian National Statistical Institute	Implementation of the amendment to regulation 223/2009 and the coordination role of the national statistical institutes - Statistical Office of Montenegro	Enhancing quality and efficiency through participatory processes: Aiming for the ESS Vision 2020 - Statistics Norway	Measuring quality of statistics based on mobile phone data – the case of population, tourism and balance of payments statistics in Belgium - Proximus, Eurostat, Statistics Belgium
	ESMS implementation in statistics Estonia - Statistics Estonia	Correction for linkage error in population size estimation - Statistics Netherlands / VU University Amsterdam	National statistical system of the Republic of Belarus: Coordination issues - National Statistical Committee of The Republic of Belarus	Creating flow and reducing cycle time by reorganizing teams around components in Statistics Estonia - Statistics Estonia	Fuzzy sentiment analysis using Spanish tweets - Instituto de Estudios Fiscales, Spain
		Improving the statistical process in the hotel occupancy survey - National Statistical Institute (INE), Spain		Towards a global education in official statistics - University Complutense, Madrid; National Statistical Institute (INE), Spain	Data ecosystem: A new challenge for official statistics - Istat, (Italian National Statistical Institute), University Tor Vergata, Italy

13:00-14:30 — Lunch

14:30-16:00

	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	21 - Administrative Data Systems	38 - SPECIAL SESSION: Synergies for Europe's Research Infrastructures in the Social Sciences and Official Statistics	22 - Macroeconomics	23 - Quality Management Systems 2	24 - Metadata Systems
	Reviewing the general and centralised system of collecting administrative data and how it responds to the guidelines of the code of practice and the peer review results in 2013-2014 - Statistics Finland	Synergies for Europe's research infrastructures in the social sciences and official statistics - City University London, UK	The asymmetry dilemma with Intrastat – which data is the better one? National experiences out of the ESS VIP "redesign of Intrastat" - Federal Statistical Office (Destatis), Germany	Quality work in statistics – from Q2001 to 2016 - Statistics Norway	Practical experience in the implementation of data and metadata standards in the ESS - Eurostat, Luxembourg
	Improving quality in the estimation of "true" economic performance of entrepreneurs by integrating statistical and administrative data: a new method for measuring under-reporting - Istat, Italian National Statistical Institute	Experiment for testing questionnaire translation methods in the European social survey (ESS): ask the same question versus more adaptive approaches - GESIS-Leibniz Institute for the Social Sciences, Germany	Automatic balancing of the national accounts - Statistics Sweden	The quality supporting framework of the ESS vision 2020 - Eurostat, Luxembourg	Process metadata development and implementation under the GSBPM v5.0 at Statistics Spain - National Statistical Institute (INE), Spain
	All that glitters is not gold! - Statistics Portugal	Measuring occupations: Respondent's self-identification from a large database - University of Amsterdam / AIAS, Netherlands	Assessing the quality of national and regional accounts data in the context of ESA 2010 transmission programme - Eurostat, Luxembourg	Enhancing quality practices at the Brazilian Institute of Geography and Statistics - IBGE, Brazil	Metadata management systems, living spirals or flat line? - Statistics Portugal
	Quality evaluation for a statistical register: The Italian frame SBS - Istat, Italian National Statistical Institute	Administrative data linking in the GGP: Enriching administrative data with surveys - Netherlands Interdisciplinary Demographic Institute	Approaches in quality management in government finance statistics - Istat, Italian National Statistical Institute	Quality management of statistical programs at the National Agricultural Statistics Service - U.S. Department of Agriculture, National Agricultural Statistics Service	Integrated metadata system in the Hungarian Central Statistical Office - Hungarian Central Statistical Office
	Quality assessment and validation of administrative data sources in health statistics - National Institute of Public Health (NIJZ)	New forms of data – legal, ethical and quality issues - NSD (Norway), NIDI (Netherlands), UKDA (England)	Public investment: Recording in EDP statistics & treatment under the SGP - Eurostat, Luxembourg	Assessing and improving quality in official statistics: the case of the French Label Committee - Insee, France	

16:00-16:30 — Coffee Break

16:30-17.30

Plenary Session 2
Challenges of Quality Assurance for Big Data
Keynote Speech: Genoveva Ruzic (Statistical Office of the Republic of Slovenia)

	Day 3 - 3.6.2016				
08:30-10:00	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	39 - SPECIAL SESSION: Quality of International Statistics. The Challenges for International Statistics at Global, National and Local Levels	25 - Methodology: Sampling/Non-Sampling Errors & Calibration	26 - Data Collection & Burden Respondent	27 - Big Data & Web Scraping	28 - Integrated Production & Business Process Model
	The role of international organisations in defining standards that follow the quality requirements and ensure comparability of data - Eurostat, Luxembourg	Uncertainties in the Swedish PPI and SPPI - Statistics Sweden	Using paradata to assess the quality of an online questionnaire - Statistics Austria	Big data in official statistics: Estimate job vacancies by using web scraping techniques - Federal Statistical Office (Destatis), Germany	Linkage of main components of GSBPM model through integrated statistical information system. - Statistical Office of The Slovak Republic
	International Civil Aviation Organization (ICAO) quality system for the aviation data collected under the statistics programme. - ICAO, Inter. Civil Aviation Org., Canada	Standard error estimation – how to do it quickly, efficiently and correctly - Statistical Office of the Republic of Slovenia	Quality in the gathering of online data: Standardising online questionnaires, integration with administrative sources and development of bias control mechanisms (Eustat) - Basque Statistics Institute - EUSTAT	Quality implications of the use of Big Data in tourism statistics: Three exploratory examples - National Statistical Institute (INE), Spain	Data warehouse for agricultural statistics as a tool for standardization of data processing and improving the quality of EAA calculation - State Statistical Office, the former Yugoslav Republic of Macedonia
	Enhancing statistical capacities of OIC member countries to achieve sustainable development goals: The role of SESRIC - SESRIC, Turkey	Use of calibration in official statistics: Design versus model-based calibration - pros and cons - Statisical Office In Poznań, Poznań University of Economics And Business, Poland	Response burden database and response burden indicators at the statistical office of the Republic of Slovenia - Statistical Office of The Republic of Slovenia	Quality control of web-scraped and transaction data (scanner data) - Statistics Austria	Monitoring quality in the production process model: Experiences from the INE of Spain - National Statistical Institute (INE), Spain
	Statistics governance and quality assurance - the experience of FAO. - FAO	Inference for statistics based on complete enumerations? - Statistics Austria	Managing an integrated respondent communication: Statistics Portugal experience - Statistics Portugal	New data sources to indicate levels of active citizenship - Joint Research Centre (European Commission), Italy	Statistical metadata and the GSBPM - Central Statistics Office, Ireland
	Quality assurance procedures for estimating purchasing power parities - World Bank, Washington D.C., USA		Developments in measuring the burden placed on businesses responding to statistical surveys - Office for National Statistics, UK		Karat: The new integrated data transmission system of the HCSO - Hungarian Central Statistical Office
10:00-10:15	Coffee Break				
10:15-11:30	Fernando de Rojas	Columnas	Antonio Palacios	Valle Inclán	Ramón Gómez de la Serna
	40 - SPECIAL SESSION: Opportunities and Challenges for Quality of Official Statistics- The Future of the ESS Code of Practice	29 - Data Collection: Cross-Cutting Issues	30 - Satisfying User's Needs: Dissemination	31 - Administrative Data: Topic Oriented	32 - Quality Management Systems 3
	Improving the comparability dimension of European statistics by minimizing unnecessary variation - Eurostat, Luxembourg	Using monetary incentives in face-to-face surveys: Are prepaid incentives more effective than promised incentives? - GESIS-Leibniz Institute for the Social Sciences, Germany	Changing user needs raise demand for useful indicators - Statistics Sweden	Improving building permit administrative data set for short term analysis: The French case - Ministry of Ecology, France	Quality guidelines - Federal Statistical Office (Destatis), Germany
	Big Data: From noise to evidence - European Statistical Governance Advisory Board, Luxembourg	Quality driven data collection. Towards a system for quality management based on dashboard information - Statistics Norway	Data visualisation - how to ensure understandable and sustainable statistical products - Federal Statistical Office (Destatis), Germany	Evaluating the potential for moving away from a traditional census - Office for National Statistics, UK	Managing survey quality through performance management: Building a performance management capability - U.S. Census Bureau
	Indicators. From evidence to decision - European Statistical Governance Advisory Board, Luxembourg	Mixed mode experiments in a panel survey – changes in response behaviour - Statistics Sweden	Assessing and documenting quality of indicators: Established practices and outstanding issues - Eurostat, Luxembourg	Integrating geo-referenced data from different sources: Livestock surveys and administrative data - Istat, Italian National Statistical Institute	The OECD recommendation on good statistical practice - OECD Statistics Directorate
		Modernisation of German household surveys: modularisation & mixed-mode – future challenges - Federal Statistical Office (Destatis), Germany	Reviewing aspects of user orientated quality reporting - Office for National Statistics, UK	Administrative data and survey data on electricity use in Hungary - Hungarian Energy And Public Utility Regulatory Authority	Data quality assessment methods and tools in SSO - Macedonia - State Statistical Office, the former Yugoslav Republic of Macedonia
11:30-12:45	Closing - Plenary Session 3 Chair: Eduardo Barredo (Eurostat) Panelists: Walter Radermacher (Eurostat), Konrad Pesendorfer (Statistics Austria), Alfredo Cristobal (INE), Martti Hetemäki (ESGAB), Juan Peñalosa (Bank of Spain)				
12:45-13:15	Refreshments				