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### Economic Commission for Europe

Conference of European Statisticians

#### Group of Experts on Population and Housing Censuses

##### Thirteenth Meeting

Geneva, 7-9 July 2010

Item 4 of the provisional agenda

##### **Beyond the 2010 census round: Plans for the 2020 round**

### Planning for the 2020 United States Census

#### Note by the United States Census Bureau

##### *Summary*

The United States Census Bureau will be conducting the 2020 Census in an increasingly demographically and culturally diverse nation, with a growing population characterized in part by informal, complex living arrangements and by swiftly evolving technology. The 2010 Census will be the most expensive in history, even after adjusting for inflation. Keeping census-taking costs under control will require fundamental changes. Robust, early planning and investment in research are crucial, and that a substantial change in approach must occur in order to link budget, risk, schedule, and acquisition to planning, research, development, and testing.

The rising costs of the 2010 Census were largely driven by three factors: (1) declining self-response rates requiring the hiring of a large field staff, (2) paper-based and labor-intensive methods requiring a large field infrastructure, and (3) substantial investments in major, national updating of the address frame just prior to the enumeration (2009). We believe that reducing the costs of the 2020 Census can be achieved by tailoring methods to the many and diverse subgroups of the population (such as through the use of the Internet to gather information from the technologically literate), reusing administrative data where possible (such as for non-response), designing software to reduce staff time, and by continuously updating the address frame over the decade.

1. The Bureau of the Conference of European Statisticians (CES), at its meeting held in Washington, D.C. (United States) on 19-20 October 2006, approved the renewed terms of reference for the Steering Group on Population and Housing Censuses and the plan for future CES activities on population and housing censuses. The CES Bureau also agreed that the Steering Group would coordinate the work on the diverse types of meetings.
2. The present document was prepared on request by the Steering Group on Population and Housing Censuses, for presentation and discussion at the Thirteenth Meeting of the Group of Experts on Population and Housing Censuses, in Geneva on 7-9 July 2010.

## I. Introduction

3. The United States Census Bureau will be conducting the 2020 U.S. Census in an increasingly demographically and culturally diverse nation, with a growing population characterized in part by informal, complex living arrangements and by swiftly evolving technology. The 2010 Census will be the most expensive in history, even after adjusting for inflation. (The projected cost of the 2010 Census represents a 58.5% increase in the real cost per housing unit over Census 2000 costs, which in turn was a 76.2% increase over 1990 Census costs.) If no changes are made and costs grow as they have historically, the 2020 Census will likely cost over US\$30 billion. Keeping census-taking costs under control will require fundamental changes. Simply reducing the budget without fundamental changes will jeopardize the quality and credibility of the endeavor.
4. The rising costs of the 2010 Census were largely driven by three factors: (1) declining self-response rates requiring the hiring of a large field staff, (2) paper-based and labor-intensive methods requiring a large field infrastructure (automation of 2010 Census non-response follow-up was abandoned in 2008), and (3) substantial investments in major, national updating of the address frame just prior to the enumeration (2009). We believe that reducing the costs of the 2020 Census can be achieved by tailoring methods to the many and diverse subgroups of the population (such as through the use of the Internet to gather information from the technologically literate), reusing administrative data where possible (such as for non-response), designing software to reduce staff time, and by continuously updating the address frame (and maps) over the decade. The United States cannot reduce the cost of the census by reducing the quality of the enumeration, because current statutes prohibit the use of adjustment to correct coverage issues.
5. The 2020 Census planning approach is to (1) research new methods early enough to inform timely design decisions, (2) incorporate strong risk management, strong program management, and comprehensive systems engineering (including enterprise architecture) from the beginning of the planning process, and (3) design a solution that is robust, resilient, and flexible enough to respond to social and technological changes. We will create this design by taking advantage of the American Community Survey (ACS) testing approaches (e.g., the ACS methods panel); conducting many small, inexpensive tests to narrow options; and taking advantage of cross-program uses of systems being developed. In contrast, the 2010 Census chose a fixed design early that led to prematurely determined and inflexible life-cycle costing; incorporated only limited risk management, program management, and systems engineering late in the life-cycle; and developed many single-purpose systems and methods. As a consequence, a misalignment of schedules and acquisitions to budgets led to deferring the true 2010 Census costs and risks to the end of the decade, resulting in expensive and late design changes.
6. Consequently, it is clear that robust, early planning and investment in research are crucial, and that a substantial change in approach must occur in order to link budget, risk, schedule, and acquisition to planning, research, development, and testing.

## II. Goals and Planning Principles

7. The 2020 Census has four strategic goals:

- (a) An Accurate and Complete Census;
- (b) Embraced and Valued Results;
- (c) An Efficient Census; and
- (d) A Well-Managed Census.

8. All of the four goals are part of early planning, research, and testing efforts. Attempting to strike the right balance between goals 1 and 3—“an accurate and complete census” and “an efficient census”—focuses on the tradeoffs between the two potentially conflicting goals of quality and cost. Opening early dialog with our stakeholders (such as the Census Advisory Committees) to gather additional ideas is part of ensuring “embraced and valued results”.

9. The first step in the process was to solicit bold and innovative ideas both from Census Bureau staff and from key stakeholders, including several members of the National Academy of Sciences (NAS) Panel to Review the 2010 Census. Staff then consolidated the more than 600 ideas into approximately 75 possible research projects, assessed the methodologies needed to carry out those projects, and are developing a Fiscal Year 2012 Planning, Research, and Testing budget initiative to kick off the 2020 Census budget life cycle and serve as the foundation for the 2020 Census research program. This research agenda will continue to evolve as further external consultations take place, including from a workshop being planned by the NAS Panel (which will include international participants), and from close consultation with international statistical offices, such as Statistics Canada. The strategic outcome is to develop a design which strikes a balance between delivering the highest quality census while reducing costs and managing risks. The research project choices are being prioritized guided by the following principles established by the Census Bureau’s Director:

- (a) Reduces Cost—potential that the project could result in overall reduction in census cost per housing unit versus historical trends;
- (b) Improves Quality—potential that the project could result in overall improved census quality;
- (c) Reduces Field Timeline—potential that the project could result in reducing the amount of time that field data collection occurs (thus reducing recall bias);
- (d) Allows Tailored Response Modes—potential that the project supports customization of response modes by geography and demographics (thus improving response and potentially reducing differential undercoverage);
- (e) Leverages ACS—potential that project could integrate software and hardware improvements into the American Community Survey and that testing could occur using the ACS infrastructure (such as the ACS Internet self-response test planned for 2011);
- (f) *Supports Continual Frame Updating*—potential that the project supports the updating and improvement of the address frame and spatial database over the decade;
- (g) Supports Agile Decision-Making—the potential for the project to be supported by small tests thereby allowing quick and informed decision-making, in support of a more flexible and resilient overall design;

(h) Reuses Data—potential for the project to use administrative records or existing Census Bureau data, including ACS data;

(i) Leverages Systems and Methods—potential for the project to leverage existing systems and/or methods to jump-start development of systems or processes;

(j) Leverages Partnerships—potential for the project to use external partners to support the census design; and

(k) Supports Organizational Solutions—potential for the project to lead to more agency-wide solutions across program areas, rather than development of throw-away solutions and/or duplication of systems and methods.

10. The guiding principles converged into four key research areas:

(a) Organizational solutions and IT integration (headquarters and field infrastructure).

(b) Continual updating and targeted address canvassing (address frame and spatial infrastructure).

(c) Mode expansion including telephone and Internet (enumeration – self-response).

(d) Using administrative records data to save cost by reducing field activities (enumeration – follow-up).

11. The overall research approach is to engage in many small tests supported by common test infrastructures in order to minimize the costs of testing.

12. The extent to which the four key areas are made operational can be thought of as points on a continuum from redoing the 2010 Census to radical change. The more one invests in research that validates alternative approaches to census-taking, the more confidence one can gain in moving toward the “change” end of the continuum with its potential cost savings (see Figures 1, 2, and 3). To be sure, the 2020 Census design may be a transitional census, in the same way that the 1960 and 1970 Censuses were transitional censuses on the way to maximum use of the mail-out/mail-back approach (90 percent of housing units in the 2010 Census).

13. Clearly, lessons learned from the 2010 Census operational experience and results of the Census Program of Evaluations and Experiments (CPEX) and the Census Coverage Measurement (CCM) Program will also play important roles in guiding future research. Yet work must begin before all the 2010 Census lessons learned or CPEX and CCM findings are known; the research program will incorporate those results as they appear.

14. In summary, early work on the 2020 Census will be directed towards investigating innovative ways to maintain or improve census data quality and coverage, while keeping the cost per housing unit within acceptable levels. Emerging design alternatives can be thought of as being on a continuum from enhancing the methods used for the 2010 Census toward extreme use of automation and administrative records to replace in-person enumeration. The outcome of the research and testing phase is to see where on the continuum the 2020 Census design will likely fall. The investment of funding for this research is expected to result in significant cost savings over the life cycle of the 2020 Census versus “redoing” the 2010 Census in 2020.

### **III. Next Steps**

15. We are completing the steps involved in submitting a budget initiative for the 2020 Census for review by the Department of Commerce (DOC) and then by the Office of Management and Budget (OMB). We have briefed the DOC Budget Office on our overall strategy and have been encouraged to proceed to the development phase. Of course, the overall strategy must be approved by the OMB and the Congress before it is implemented.

16. Whereas for the 2010 Census the decision on a design was made early in the process, supported by a research program focused on the best methods for implementing that design, we are proposing instead that the 2020 Census design be determined by focused early research. One of the key strategies to ensuring that budgets, schedules, acquisitions, and requirements are aligned is to have one full life-cycle 2020 Census schedule, which will be periodically updated, wherein near-term activities are well defined and out-year activities at first are high-level, with milestones. Out-year activities will vary depending on the operational alternatives selected and the technology and acquisition strategies required.

Figure 1.  
 2020 Census Operational Design Space with Options  
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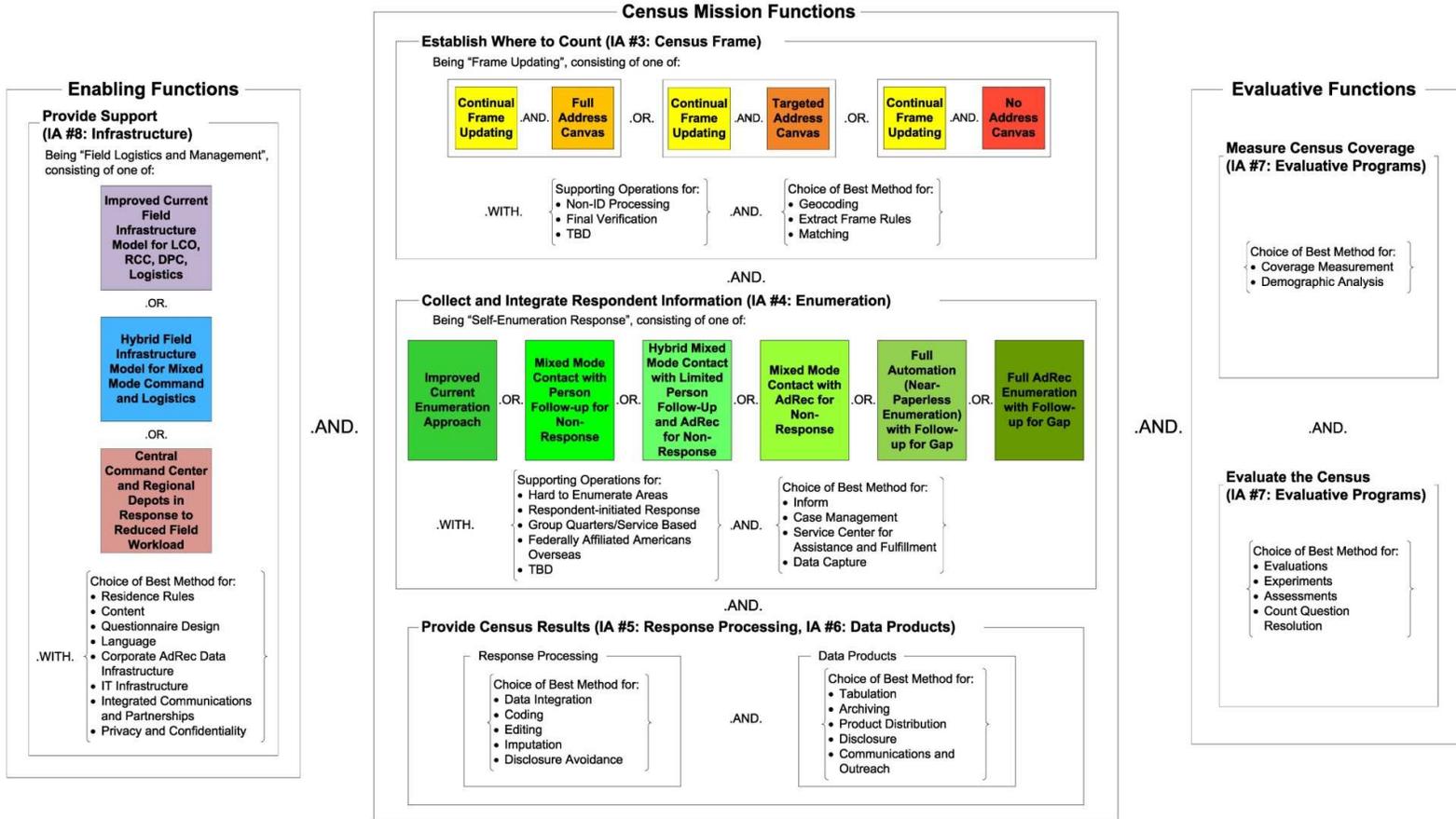
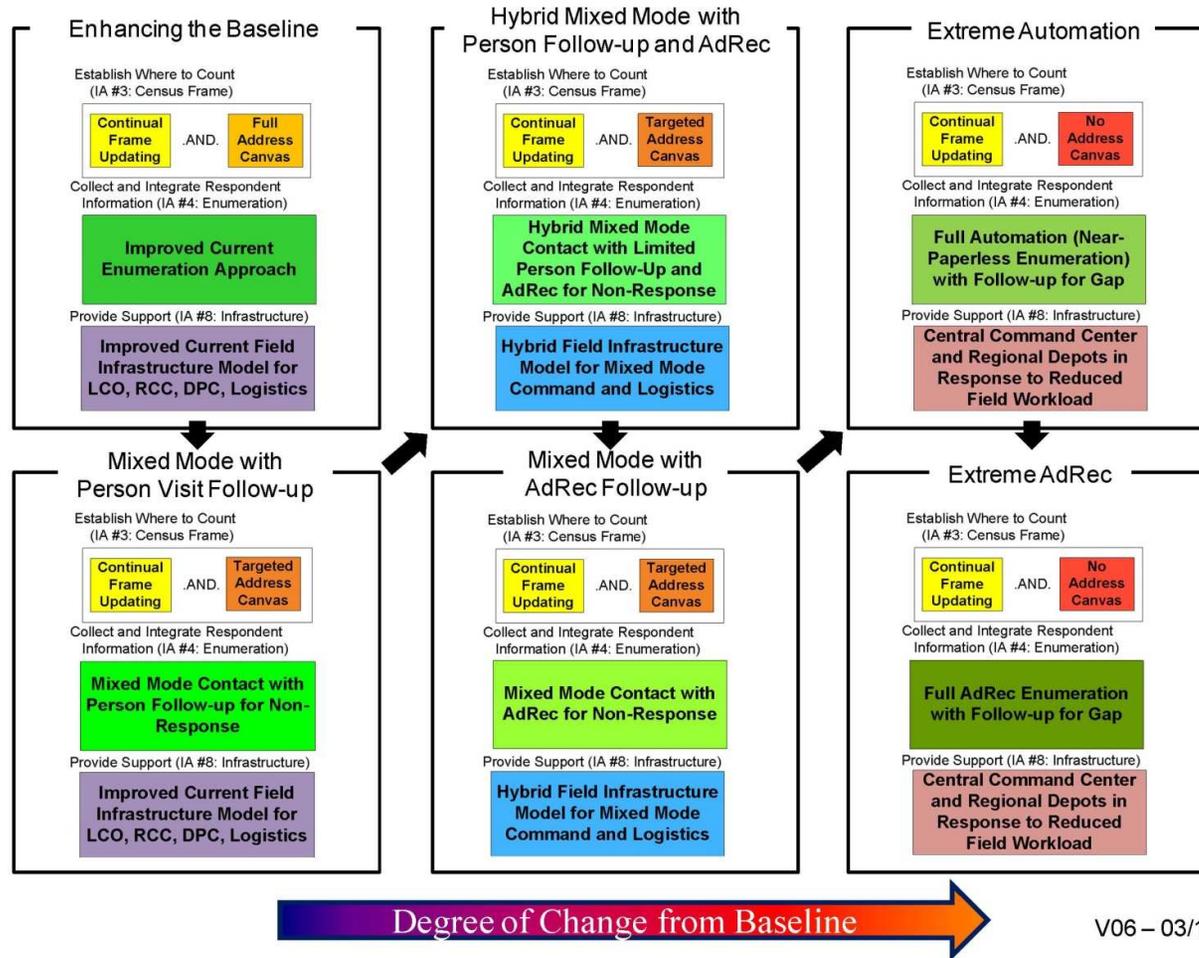


Figure 2.  
2020 Census Operation Design Alternatives



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Figure 3.  
2020 Census Operational Design Alternatives

