Convocatorias 2014
Proyectos de I+D "EXCELENCIA" y Proyectos de I+D+I "RETOS INVESTIGACIÓN"
Dirección General de Investigación Científica y Técnica
Subdirección General de Proyectos de Investigación

AVISO IMPORTANTE

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Parte A: RESUMEN DE LA PROPUESTA/SUMMARY OF THE PROPOSAL

INVESTIGADOR PRINCIPAL 1 (Nombre y apellidos)**:**
ºALBERTO CORSÍN JIMÉNEZ
INVESTIGADOR PRINCIPAL 2 (Nombre y apellidos)**:**

TÍTULO DEL PROYECTO: ECOLOGÍAS EN BETA: UNA EXPLORACIÓN ANTROPOLÓGICA DE MUNDOS URBANOS CON CÓDIGO ABIERTO
ACRÓNIMO: ECOBETA
RESUMEN Máximo 3500 caracteres (incluyendo espacios en blanco):

Las ciudades de medio mundo son hoy testigos de una transformación de sus paisajes materiales e infraestructurales. En el nombre de la 'tecnología abierta', el 'hardware abierto' o, más ampliamente, el 'urbanismo de código abierto', iniciativas ciudadanas de muy diversa índole intervienen directamente sobre la conformación material del espacio público, diseñando y equipándolo con dispositivos, redes e incluso arquitecturas que 'infraestructuran' así sus derechos de ciudadanía. Desde los huertos urbanos a las micro-estaciones de energía alternativa, pasando por bases de datos de gestión del saneamiento del agua o redes Wi-Fi neutrales y libres, las infraestructuras urbanas de código abierto re-inscriben la ciudad con nuevas relaciones socio-técnicas. Tales intervenciones en el tejido urbano desafían el papel del Estado como garante y proveedor de bienes y servicios públicos. En su lugar, el espacio público asume la forma de un artefacto tecno-material que los ciudadanos mismos se encargan de servir y mantener. ECOBETA busca estudiar el surgimiento del urbanismo de código abierto en un ambicioso marco comparativo. Los proyectos urbanos de código abierto desestabilizan buena parte de los paradigmas y presupuestos de la teoría urbana contemporánea, por ejemplo, en torno a la naturaleza de las infraestructuras, los bienes públicos, la propiedad legal, los sistemas de diseño experto o los derechos ciudadanos. Sobre la base de la comparación sistemática de proyectos de infraestructuras de código abierto en Buenos Aires, Madrid y el corredor Los Ángeles-San Francisco, la hipótesis central de ECOBETA postula que una mejor comprensión del funcionamiento de proyectos urbanos de código abierto permitirá reconsiderar en su totalidad la idea misma de ciudad como 'cultura epistémica': ¿qué métodos, protocolos y estándares se aplican en el diseño de infraestructuras urbanas de código abierto?; ¿qué es

necesario hacer para que una tal infraestructura adquiera estatus legal?; ¿qué pasos han de darse para que las iniciativas ciudadanas que gestionan estas infraestructuras asuman protagonismo político en los modelos de gobernanza urbana? Apoyándose en metodología etnográfica de larga duración, ECOBETA ofrecerá una visión empírica, comparativa y analítica de un fenómeno apenas estudiado, poniendo en marcha una exploración sin precedentes de las dinámicas epistémicas, ambientales y políticas que redefinen las ecologías urbanas a día de hoy.

PALABRAS CLAVE: ANTROPOLOGÍA, EXPERIMENTOS, PROTOTIPOS, CÓDIGO ABIERTO, ECOLOGÍAS URBANAS

TITLE OF THE PROJECT: ECOLOGIES IN BETA: AN ANTHROPOLOGICAL EXPLORATION OF THE OPEN-SOURCING OF URBAN WORLDS

ACRONYM: ECOBETA

SUMMARY Maximum 3500 characters (including spaces):

Cities worldwide are witnessing today a transformation of their material and infrastructural landscapes. In the name of 'open technology', 'open hardware' or, more amply, 'open-source urbanism', citizens are wiring the landscape of their communities with the devices, networks or architectures that they deem worthy of attention. From urban community gardens to alternative energy micro-stations or water sanitation databases, open-source urban infrastructures (OSUI) wireframe the city with new socio-technical relations. Such interventions in the urban fabric challenge the state's role as guarantor and purveyor of public goods. Public spaces become instead techno-material artefacts that citizens take upon themselves to service and maintain. This research project seeks to study the rise of open-source urbanism in an ambitious comparative light. Open source projects destabilize taken-for-granted assumptions about the nature of infrastructures, public goods, legal property, technological development, expert design systems, and the rights of citizenship. Drawing on the systematic comparison of OSUI in three urban locales in Euro-America and the Global South, ECOBETA's central hypothesis postulates that understanding how OSUI work can contribute towards reframing what we know about cities as epistemic cultures more generally: what methods, protocols and standards are applied in the design of an OSUI?; how do OSUI designs acquire legal status?; how do such citizen initiatives assume a political voice in models of urban governance? Providing much-needed empirical and analytical insight from Buenos Aires to LA-San Francisco and Madrid, the project's long-term ethnographic perspective will launch an unprecedented exploration of the epistemic, environmental and political dynamics that are redefining urban ecologies today.

KEY WORDS: ANTHROPOLOGY, EXPERIMENTS, PROTOTYPES, OPEN-SOURCE, URBAN ECOLOGIES

Parte B: INFORMACIÓN ESPECÍFICA DEL EQUIPO

B.1. RELACIÓN DE LAS PERSONAS NO DOCTORES QUE COMPONEN EL EQUIPO DE TRABAJO

1. Luis Uriel Fogué Herreros:
   Titulación: Arquitecto
   Tipo de contrato: Contratado (Profesor Asociado, Escuela Arquitectura, Universidad Europea de Madrid)
   Duración del contrato: Indefinido

B.2. FINANCIACIÓN PÚBLICA Y PRIVADA (PROYECTOS Y/O CONTRATOS DE I+D+I) DEL EQUIPO DE INVESTIGACIÓN (repita la secuencia tantas veces como se precise hasta un máximo de 10 proyectos y/o contratos).

1. Alberto Corsín Jiménez
   Referencia del proyecto: CSO2010-17735
   Título: Economía cultural de la innovación abierta en Madrid
   Investigador principal (nombre y apellidos): Alberto Corsín Jiménez
   Entidad financiadora: Ministerio de Ciencia, España
   Duración: 1/1/2010 – 31/12/2014
   Financiación recibida: €90000
   Relación con el proyecto que se presenta: Muy relacionado
   Estado del proyecto o contrato: Concedido

2. Alberto Corsín Jiménez
   Referencia del proyecto: NA
   Título: Ciudad Escuela: Pedagogía de Código Urbano Abierto
   Investigador principal (nombre y apellidos): Plataforma 15Muebles
   Entidad financiadora: Museo Nacional Centro de Arte Reina Sofía
   Duración: 1/10/2013 – 1/10/2014
   Financiación recibida: €6000
   Relación con el proyecto que se presenta: Muy relacionado
   Estado del proyecto o contrato: Concedido

3. Alberto Corsín Jiménez
   Referencia del proyecto: NA
   Título: Public knowledge: an ethnography
   Investigador principal (nombre y apellidos): Alberto Corsín Jiménez
   Entidad financiadora: Centre for Research in Socio-Cultural Change (CRESC), University of Manchester
   Duración: 1/09/2006 – 31/08/2007
   Financiación recibida: €30000
   Relación con el proyecto que se presenta: Algo relacionado
   Estado del proyecto o contrato: Concedido

4. Alberto Corsín Jiménez
   Referencia del proyecto: NA
   Título: Being a student: an ethnographic perspective
   Investigador principal (nombre y apellidos): Alberto Corsín Jiménez
   Entidad financiadora: University of Manchester's Teaching Quality and Enhancement Fund & UK's Higher Education Academy
   Duración: 1/09/2005 – 1/06/2006
   Financiación recibida: €15000
   Relación con el proyecto que se presenta: Sin relación
   Estado del proyecto o contrato: Concedido

C.1. SCIENTIFIC PROPOSAL

A. State-of-the-art and objectives

What would a city look like if its infrastructures were designed, built, certified and managed by its residents? Cities worldwide are witnessing today a transformation of their material and infrastructural landscapes. In the name of 'open technology', 'open hardware' or, more amply, 'open-source urbanism', citizens are wiring the landscape of their communities with the devices, networks or architectures that they deem worthy of attention. From urban community gardens to alternative energy micro-stations, Wi-Fi networks or water sanitation databases, open-source urban infrastructures (OSUI) wireframe the city with new socio-technical relations. Such interventions in the urban fabric are transforming, if not directly challenging the public qualities of urban space. Public spaces become techno-material artefacts that citizens take upon themselves to service and maintain.

The origins and ties that OSUI have to grassroots initiatives places them in remarkable continuity with the long-standing traditions of do-it-yourself and auto-construction urban designs (Douglas 2014; Holston 1991) and community architectural and 'people-as-infrastructure' projects in the Global South (Simone 2004; 2010), which have recently been drawn upon to articulate a so-called 'southern turn' in urban theory (Rao 2006). People-as-infrastructure and OSUI projects both partake in a conception of the urban condition as a region of epistemic overflow, where socio-technical, environmental and political relations fly below the radar of market and state practices. The open-ended nature of these social and infrastructural assemblages models a conception of cityness as an 'epistemic culture' (Knorr-Cetina 1999): a view of the urban as an 'ecology in beta' that eludes and confounds existing epistemic, technical and governmental regimes. ECOBETA's **central hypothesis** revolves precisely around this notion of 'ecologies in beta' and postulates that understanding the political dynamics of contemporary cities demands a correlative understanding of how people and infrastructures modulate each other as open and experimental design systems. In other words, **understanding how open-source infrastructures work can contribute towards reframing our understanding of how cities function as epistemic cultures more generally**.

Drawing on long-term ethnographic fieldwork and the systematic comparison of do-it-yourself urban infrastructural projects in Buenos Aires, LA-San Francisco and Madrid, ECOBETA aims to produce an unprecedented exploration of the different epistemic cultures that underwrite the making of urban ecologies today. It aims to do so by focusing on three challenges that OSUI pose to the institutions of urban governance and property. Each challenge articulates one of three central **objectives** for the project as a whole:

1. *Conceptually*, projects in open-source urbanism populate urban ecologies with novel entities and interfaces – digital and material – whose emergence destabilizes classic regulatory distinctions on what were hitherto deemed public, private or commercial property-forms, technologies and spaces. A key objective in this regard is to document how the development of open-source infrastructures transforms the composition of urban ecologies: **who and what is urban space made-up of when its equipment and infrastructures are open-source?**

2. *Technically*, open-source projects are built on networks of expertise and skills that traverse localized boundaries. Decentralized communities working in open-source projects have to reach prior consensus over the methods, protocols and standards to be applied. These decisions often become inventive themselves of new designs, techniques and rules for certification. Open-source technical projects take shape therefore as <u>experimental cultures</u>. Central to the research here is to better understand the social processes at stake in the opening-up of urban design as an experimental form: **What kind of socio-technical and legal assemblage is an open-source infrastructure and how does it come about?**

3. *Politically*, open-source projects are transforming the stakes over and models of <u>urban governance</u>. In an open-source project a community assumes political and expert management over its infrastructures. Such assumption by local communities of the governance of infrastructures strains the social contract that state administrations have traditionally subscribed as overseers of urban equipment. In this regard the project aims to document and understand how the organisation of open-source projects assumes a political voice in models of urban governance: **how are state administrations responding to the emergence of new public interlocutors and expert design systems in urban matters?**

Providing much-needed empirical materials and building on state-of-the-art scholarship in social anthropology, social studies of science (STS), and urban studies, ECOBETA aims to launch an ambitious exploration of the conceptual, technical and political forms of inventiveness that are redefining key debates of our times – over the nature and infrastructures of sustainability, collaborative forms of expertise, and systems of urban governance.

WHY THIS PROJECT NOW? HOW DOES IT RESPOND TO THE 'RETOS' CALL?

Under the spell of a 'smart cities' rhetoric municipalities across the world are increasingly turning to digital technologies for their alleged capacity to process and mobilize 'big data' in designing and deploying responsive- and energy-efficient urban-networked systems. Cisco's *Connected Urban Development* initiative, for example, has produced influential white papers where urban-networked systems are described as infrastructures for 'environmental sustainability' (e.g. Zhen et al 2009). Scholars have critically engaged with the discursive assumptions informing these policy and entrepreneurial developments (Greenfield 2013), although empirical investigation into how urbanites relate to sensor-technologies is only just emerging (Gabrys 2014). There remains, however, no sustained, empirically-based problematization of what 'sustainable urban infrastructures' might be in different places around the world, one where both the shared assumptions *and* local particularities about the workings of expert design systems, social relations and material energies are contrasted on a global scale. In this guise, OSUI seem an ideal theoretical and empirical site for exploring how urban communities design and equip the city as a sustainable infrastructure. Open-source communities have become global icons for innovative, grassroots techno-developments, challenging received assumptions about both the material and sociological affordances of what count as 'infrastructures', inasmuch as the appeal to 'open-source' has come to stand both for a claim on access to resources and technologies and a call for political and social justice (e.g. Kelty 2008).

Despite the prominence that discourses around 'openness' have garnered of late, there is to-date no systematic inquiry into the challenges that open-source infrastructural projects pose to systems of urban governance (Corsín Jiménez 2014). Openness remains largely an epistemic formula applied to intellectual rather than industrial property forms, and to

expressions of informational capitalism leveraged around digital media rather than hardware. Thus, it has become somewhat of a commonplace to suggest that the structure of digital information – in particular the negligible costs of reproduction – instantiates a *de facto* regime of superabundant or 'open knowledge' (Foray 2006: 172-179), and to alert, likewise, about the enclosure of such informational commons by existing proprietary regimes (Boyle 2008). Such a view of open knowledge has also prompted scholars to study the rise of novel organisational forms, in particular so-called peer-to-peer networks of collaboration (Benkler 2006). The common view here is that peer-to-peer decentralized networks are blurring traditional distinctions between production, distribution and consumption of informational-forms. In this economy, users become themselves producers of content (so-called 'prosumers'), and cooperation becomes the economy's main, if not only dynamo (Benkler 2011).

The emphasis on the immateriality of networked-commons is misleading, however. The few in-depth ethnographic studies of F/OS communities that are available (studies focused on software developers) go at great pains to underscore the communities' self-consciousness as *infrastructural* projects (Kelty 2008; Coleman 2013). Indeed, as Charlotte Hess and Elinor Ostrom have pointed out, it is worth remembering that access to information depends to this day on the maintenance and management of complex infrastructural facilities (Hess and Ostrom 2003). There is thus an urgent need for producing analyses of open-source projects that call specific attention to their infrastructural affordances: a focus on the *hardware*, not just the software or immateriality of openness.

In this regard, ECOBETA responds to the *Retos de la Sociedad* call by tackling head-on what is arguably the most demanding scenario for theories of infrastructural complexity: the urban condition. The role of infrastructures in the sustenance of social life has in fact drawn the attention of scholars of late (Larkin 2008; Harvey 2012), not least of all amongst those working in urban settings, where the way in which cities take shape as infrastructural lattices – across human and nonhuman relations (Farías and Bender 2010) – has come to complement previous interest in spatial dynamics and networked-urbanism (McFarlane and Rutherford 2008; Elyachar 2010). The rise of OSUI projects brings about a provocative challenge in this context, entangling anew the demarcations between the epistemic, technical, legal and political domains conventionally imagined as making up city life. ECOBETA is specifically designed to explore the global reach and significance of these challenges, bringing them to bear on contemporary urban theory and practice.

RESEARCH THEMES

ECOBETA is organized around three research themes which address domain-specific questions for each of the objectives outlined above: (i) on the evolving shape and composition of urban ecologies; (ii) on the experimental nature of open-source urban projects, and; (iii) on the social organisation of open-source projects as a political active voice in urban governance. The themes provide the conceptual drivers for the ethnographic and methodological programme.

1. Urban ecologies

'What it might mean to be a city'?, wonders Mark Shepard in response to the challenge that novel sensor-networks are posing to urban ecologies (2011a: 33). Cities, Shepard and other commentators have noted, are getting 'smarter' as information processing technologies and ubiquitous computing systems – tiny microprocessors and wireless sensor networks – get embedded in our urban landscapes (Offenhuber and Schectner 2012). Capabilities, skills and forms of sentience once ascribed to human actors are today being re-inscribed into sensor-landscapes whose emerging topographies often escape expert governance (Sassen

2011). F/OS Wi-Fi networks, for instance, lay out geographies of political communication that circumvent public and private telecommunication systems. These are 'sentient cities' whose architectures foil our environs with 'ambient intelligences' (Crang and Graham 2007). Whereas the sociotechnical constitution of urban spaces was once studied as a (neo-Marxian) ecosystem of 'metabolic' exchanges between 'natural, real, fictional, mechanical and organic processes' (Swyngedouw 1996: 66), the advent of digital technologies has profoundly transformed both the sources and the reach of a city's ecological affordances, leading some authors to speak of 'cyborg urbanization' instead (Gandy 2005). These developments rehearse, too, a concern for how the relations between different agentives – sensors, plants, buildings, data, people – come together in the emergence of novel semiotic lifeworlds in the city. These ecologies have variously been called cosmopolitical (Stengers 2005) or ontological (Viveiros de Castro 2004), and there are indeed good grounds to think that OSUI offer a promising analogue for exploring how social relations traverse material and technological structures in order to redefine local terms of environmental engagement (Benjamin, Yang and Jeremijenko 2011). We may imagine thus the opening of the sources that interface with and mediate an urban ecology as a proliferation of new forms of 'urban wild' (Hinchliffe et. al. 2005).

However, the origins and ties that OSUI projects have to community initiatives relates them also to the long-standing tradition of do-it-yourself and auto-construction urban designs (Douglas 2014; Holston 1991) and grassroots architectural and 'people-as-infrastructure' projects in the Global South (Simone 2004; 2010). Open-source urban hardware projects mobilize here social and material forces that come together in 'conjunctural', 'ephemeral' and often 'fungible' assemblages that fly below the radar of market and state practices, echoing the infrastructural designs of subaltern urbanisation (Chattopadhyay 2012). They call out an urban ecology that resonates in more ways than one with the epistemic overflow demanded by the 'southern turn' in urban theory (Rao 2006, McFarlane 2008), where the infrastructural is not reduced to its surfacing in the material landscape of the city, but gathers itself through symbolic, poetic and affective, as well as material capacities (Larkin 2013). The study of OSUI offers therefore an unprecedented opportunity for complementing the perspective afforded by 'southern' urban theory with the novel assemblages of grassroots, collaborative design systems under rapidly shifting regimes of informational capitalism. In this sense, it further offers a locus for using infrastructural ecologies as a 'comparative mode of thought' with which to approach the study of global urbanism (McFarlane 2010).

2. Experimentation

Open-source projects are 'recursive' by nature, in that any technological advance must by necessity carry-forth the project's organisation as whole (Kelty 2008). Take for example F/OS software projects, where the architectural framework for debate and exchange is self-grounded through the very activity of writing, editing, patching or recompiling the infrastructure (code) upon which programmers work. The infrastructure and the organisation, in other words, cannot be dis-embedded from one another. In this guise, the recursive quality of open-source projects has been singled-out as indicative of their experimental nature (Fischer 2009; Rheinberger 1997), insofar as they do not easily accommodate to the proprietary and 'black-boxing' protocols (standardisation, classification, certification) that characterise intellectual and industrial designs (Lampland and Leigh Star 2009). Once a techno-scientific project has been black-boxed it is set ready for circulating along the appropriate intellectual (copyright) and industrial (patent) property channels (Biagioli et. al. 2011). It is dis-embedded from the organisation and let go.

What happens, however, if the classification and standardisation of technologies and infrastructures is kept deliberately open – if the distinction between output and organisational

design is crafted so as to prevent the dis-embedding entailed by proprietary formations? OSUI projects are just such kind of projects. They are dispositifs-in-the-making. They are open to scrutiny and re-adaptation. They have not yet been 'black-boxed'. Theirs is rather an epistemics 'in beta', where the grounds for experimentation are not based on models, exemplars or representational systems but on 'prototypes' (Corsín Jiménez 2013). In this capacity, OSUI call forth a particular socio-technical arrangement for carrying out experimental projects in the city. They lay out a particular type of 'urban laboratory' (Karvonen and van Heur 2014). They summon operational frameworks where the experimental system is not conceived as a technical or expert system to be added or injected into the urban lattice. Nor is it conceived as an infrastructure whose very 'experimental' status shows the extent to which the city's metabolic system is held together by constant upkeep and repair work (Castán Broto and Bulkeley 2013). Experimentation is not something carried out by experts, whether elite or grassroots. Rather, prototypes are always, already 'pre-broken' (Fuller and Haque 2008: 30), because their experimental conditions consist precisely in holding themselves up to deconstruction and reassembling. Experimentation is thus an open-ended process, assembling, traversing and modulating landscapes, people and materials in a dynamics of *tâtonnement*, of groping and figuring out. Open-source infrastructures are therefore better rendered in this context as 'interfaces': provisional 'diagrams of dynamic assembly' that provide connections and enable affordances 'between things and people and forms and information' (Bratton and Jeremijenko 2009: 46). This notion of infrastructural projects as fragile and tentative but also generative undertakings challenges received assumptions about who stands for, and what role expert design systems play in shaping how a city produces knowledge (about itself). Such a view of the functioning of cities as epistemic cultures opens-up a promising scenario for comparing how people-as-infrastructure developments in the Global South and global OSUI projects variously contribute towards the sustainability and durability of the urban condition (cf. Latour 1991).

3. Governance

Critical urban geography has a distinguished tradition of investigating the relations between urban space, social justice and the conditions of political citizenship (Harvey, 2009; Soja, 2010). Recent scholarship has furthered this agenda by reawakening interest in Henri Lefebvre's famous essay, 'The Right to the City' (Lefebvre, 1996; see also Purcell 2013), particularly as regards alternative configurations of democratic participation in urban decision-making processes, say, over matters of housing, water, transportation, etc. (Mitchell, 2003). Although the formal and substantive qualities of the 'right to the city' remain contested (is it a moral right, a socio-economic right, a civil liberty?; see Attoh, 2011), the concept has gained purchase of late as a model for re-articulating expressions of insurgent citizenship and on-going struggles over the production and reproduction of urban life.

Whilst the right to the city remains a fairly abstract signifier, there is a sense in which OSUI projects offer a specific manifestation of public action wherein such rights take expression and 'ground' themselves in concrete infrastructural conditions. Thus, recent scholarship has drawn attention to the role of micro-spatial 'do-it-yourself' urban design interventions as placeholders of such 'right to the city' actions (Iveson 2013). But we can think of the social form of an open-source project (e.g. peer-to-peer network, a cooperative) also as the very hardware for the political programme of rights it lays claims to. In other words, it articulates a 'right to infrastructure' that comes into being, first and foremost, as the design of an infrastructure (Corsín Jiménez 2014). In the larger context of urban political struggles, the configuration of emerging 'rights to infrastructure' offers thus an exciting point of entry into the appearance of novel models of urban governance, in particular the rise of urban commons movements (Eizenberg 2012; Harvey 2012), from a perspective that is alert and sensitive to the role of material politics in an urban context (Marres and Lezaun 2011).

PROJECT DESIGN: CASE STUDIES AND RESEARCH QUESTIONS

ECOBETA's comparative framework has been designed around a tightly knit selection of case-studies. The choice of urban locales responds to the conceptual and empirical challenges outlined above. Cities like Cape Town, Lagos or Jakarta have become global icons of the 'southern turn' in urban theory (Simone 2010). These South Asian / African urban locales have, however, misleadingly become synonymous for a critical label that effectively leaves aside crucial experiences such as those of Latin American urbanization. The study of Buenos Aires offers therefore an important corrective in this regard. Moreover, the theoretical leverage of the southern turn has gained currency for the most part vis-à-vis a critique of large-scale infrastructural developments and top-down urban planning projects in metropolitan centres. Thus, there is still scope for a better appreciation of how grassroots and open-source infrastructural projects traverse the city as experimental movements in their own right. On the other hand, the Los Angeles–San Francisco corridor is a global hub of the technological and legal avant-garde in open-source developments, and indeed not a few of the political programmes for digital urbanity or 'smart' citizenship worldwide are modelled after what happens there. The Madrid study stands as a control-case for the rise of such 'digital urbanism', for the city has in recent years become a global referent of open-source architecture projects (Corsín Jiménez 2014).

Although the project is globally comparative, inevitably the ethnographic process will lend salience to some issues over others. Thus, I draw below on some well-known empirical materials to outline convergences, affinities and resonances between the case studies, mapping out in the process some of the research questions likely to be yielded by their comparison and contrast. I follow the structure of the research themes:

1. Urban Ecologies

The comparative frame builds in part on work that the PI has been carrying for the past four years among guerrilla architectural collectives in Madrid, who are developing technical, constructive and associative solutions for what they refer to as 'open-source architecture' (Corsín Jiménez et. al. 2013; Corsín Jiménez 2014). Their work signals to the way in which the design of open source infrastructures populates the city with novel materials, assemblages and capacities, modulating in the process the ecologies of urban participation. A central counterpoint will be provided by the case of Buenos Aires, which has a long tradition of guerrilla and do-it-yourself interventions (e.g. Colectivo Iconoclasistas). Key research questions include: What counts as an infrastructure and how does it make its appearance in urban space – indeed, what is recognised as ontologically significant within a given urban environment (Hinchliffe et. al. 2005)? How does information get embedded in urban (open-source) infrastructures, for instance, data about sanitised water, local Internet hotspots, traffic or social protests? What sensory and agentive possibilities are imagined for urban life?

2. Experimentation

This thematic comparison emerges from the analysis of the technical, material and methodological work that goes into keeping OSUI projects 'open', with particular attention to the standards, protocols and legal ritual (licensing) involved. Central to this theme will be the ethnographic project carried out amongst urban designers, architects and technologists working in the LA-San Franciso corridor, at UCLA' cityLAB and the College of Environmental Design at Berkeley. The PI has already established contacts at both sites. Guiding questions for this theme include: How are material and social relations held together across experimental urban projects (for example, across art, technical and community relations)? How do open-source and people-as-infrastructure projects variously relate to proprietorial

forms – how are experimental designs 'white-boxed'? When and how does the method of design elicit proprietary claims and entitlements? What purchase do open-source licenses have – over what types of communities?

3. Governance

Here the terms of comparison will focus on the forms of political autonomy carved out by open-source infrastructural projects, expressed in the resurrection of the 'right to the city' as a political slogan (e.g. Purcell 2013). There are a number of dimensions and empirical questions to be addressed. On the one hand, about the forms of political interlocution that such projects assume. Some initiatives, such as those by guerrilla architectural collectives Basurama and Zuloark in Madrid, or a77 and Iconoclasistas in Buenos Aires, expressly seek interlocution with local administrations. Open-source infrastructures take front stage here as novel and emerging spaces of shared governance. In other instances, however, projects are carried out at the expense of, or even *contra* the state and the market. Guiding questions to attend to, include: Which fora allow for OSUI initiatives to play the 'politics of recognition' – how are expert and participatory competences recognised? How do collaborative expert design systems come together? To what extent are professional communities (architects, engineers) challenged by open-source urban designs and projects? These are important questions that will result in the opening-up of very different spaces of governance in different places. It is well known, for instance, that the politics of participatory infrastructures often reproduce forms of splintering urbanism (Graham and Martin 2001) or even 'split agendas' (Odendaal 2011), where urban policies aiming for inclusiveness and universality of access confront internal frictions within governmental sponsors. Do-it-yourself urban infrastructures – both Global South expressions of people-as-infrastructure and incipient forms of open-source infrastructures – share thus a capacity for decentring and destabilizing traditional regimes of political and technical governance, whose understanding will therefore be much advanced by a global comparative anthropological analysis.

B. Methodology

The research project is designed to take place over the course of three years. The centrepiece of the project is the time dedicated to ethnographic fieldwork. Two postdoctoral researchers will each carry out 15 months of ethnographic research in (respectively) LA-San Francisco and Buenos Aires, to which the PI will add his own field experience and work in Madrid.

Ethnography is a particularly apposite way for studying the design, development, on-going sustainability and effects of OSUI. There are a number of reasons for this. On the one hand, ethnographic research is able to examine how infrastructures assume material concrescence as they build up relations and energies across domains: from the commitment and investment of local communities, to the formation of collaborative expert design systems, the travails of paperwork and inscriptions across documentary, archival and media interfaces, and their settling into various professional, technical or political jurisdictions. Ethnography follows the dynamic assembly of the infrastructural as it takes shape, in the process allowing for the development of analytical insights that may destabilize taken-for-granted assumptions as to what counts, or where one should look for a political, technical or epistemic effect. Ethnography is therefore ideally suited for engaging with the 'unexpected' as an empirical form, and in this guise to assess its significance as an anecdotal or, on the contrary, an original and substantive finding. On the other hand, ethnography's commitment to long-term fieldwork offers, also, a unique vantage point from where to explore how the methodological engagement with the world of 'open-source' may double-back on social-scientific enquiry

itself. As George Marcus has put it, the study of experimental cultures inevitably calls for experimenting with the social science's own methodological infrastructure (Marcus 2013).

Where necessary, researchers will undergo technical (electronic, software) training to facilitate their participation in infrastructural projects. The project's website will showcase its research progress, as well as enable interactions amongst stakeholders in all three cities. The ethnographic dimension will prove particularly fruitful in this sense, because of the depth and duration of the relations demanded by infrastructural developments, and because of the avenues that it opens-up for collaboration among and across field sites and stakeholders.

Ethnographic fieldwork will be supplemented by comprehensive archival, interview, life history and survey work. The specific details of the data collected will vary from site to site, although some essentials will include:

<u>Archival and media work</u>: tracing the documentary life of specific infrastructural projects: files, photographs, permits, licenses, design drawings; producing a filing system, registry and preliminary index of the digital archives of those communities with online presence (websites, blogs, videos, photographs, and, if available, laboratory or architectural notebooks); data visualisations and network analyses of social media interactions; build up an archive of local news that speak to the project's concerns; archives of specific communities/organisation's internal administrative documents; identify and collect local academic texts of relevance to the project.

<u>Interviews and life histories:</u> build up an archive of c. 30 in-depth interviews for each OSUI project, including: key technical figures (architects, engineers, programmers, developers, hackers); political representatives (state officials, municipal or regional delegates, technical supervisors); community representatives (community leaders, users, supporters and opponents); local intellectuals and academic experts.

<u>Survey</u>: towards the end of fieldwork we will run a comprehensive survey designed to include variables of interest to all three sites, including for example questions on: birthplace; social and economic background; schooling and professional training; current work; age; gender; race; ethnicity; religion; digital and computing literacy; etc.

RESEARCH HEURISTICS

Research data will be mapped initially onto five heuristic fields, an exercise which will contribute towards orienting the initial phases of fieldwork as well as providing a template for coordinating the terms of comparison in the later stages of analysis. The five fields are: (i) <u>urban geography and cultural space</u> – charting and comparing how space is striated, divided up and re-classified by infrastructural developments; how spaces, people, institutions and infrastructures superpose or displace each other; (ii) <u>experimentation</u> – tracing the ways in which the city is thrown into relief as a process of *tâtonnement*, of groping, experimenting and figuring out; how material and social epistemologies graft onto and mould the urban environment; (iii) <u>legality</u> – charting how do-it-yourself infrastructures become legible as legal and technical objects – through which standards, protocols, certificates, licenses, permits, public insurance liabilities, etc.; alternatively, how open-source developments contribute to the flourishing of new 'urban wilds'; (iv) <u>political interfaces</u> – mapping and describing where and how OSUI open-up processes of political interlocution between community, expert and/or governmental actors; (v) <u>everyday life in the city</u> – documenting how everyday sociality moves in, around and uses infrastructures to lever itself out into the wider city; how the urban is turned into an experience, a resource, a value, a capacity; how it intimidates, obstructs or more generally impoverishes social action.

TEAM STRUCTURE AND MANAGEMENT

Having conducted research on urban environments and techno-scientific cultures in three countries (Argentina, Chile, Spain) for the past 15 years, the PI will lead a core research team (*equipo de investigación*) comprised of 2 postdoctoral fellows with proven research experience in the selected sites. One of these postdoctoral fellows, Adolfo Estalella, has recently been awarded a 4yr postdoc (former Juan de la Cierva) by the Spanish Ministry of Science. For administrative reasons, he is listed as forming part of the *equipo de trabajo*, although he will be officially registered as a member of the core research team as soon as his signing the postdoctoral paperwork at the Ministry entitles him to do so. The second postdoctoral fellow will be hired for 2 yrs, of which 15 months will be spent carrying out ethnographic fieldwork in Buenos Aires. We are also requesting an FPI award. In the event of funding, the recipient of the award would carry out doctoral fieldwork in the Madrid leg of the project under the supervision of the PI.

A crucial role is to be played by the **Interdisciplinary Working Group, IWG** (*equipo de trabajo*), whose members have all confirmed their participation in writing: Prof Javier Lezaún (Oxford University), a world authority on the intersections between science and democracy; Prof Fernando Domínguez (UC Davis), an expert on the material infrastructures of political and design systems; Prof Ignacio Farías (WZB, Berlin) a leading scholar of the application of STS analyses to urban contexts; Dr. Nerea Calvillo (Harvard University), a recognized expert on the use of architectural and atmospheric visualisations in urban governance systems; Uriel Fogué (Elii Architects), one of the most active voices in the Spanish architectural scene on matters of technological urban governance; Prof Manuel Tironi (Pontificia Universidad Católica de Chile), a leading scholar of STS urban studies in Latin America. Members of the Working Group will help get access to the various field sites, liaise and network with local contacts, and provide overall guidance throughout.

The core research team (PI Alberto Corsín Jiménez, Postdoc Adolfo Estalella and Postdoc to be hired), will spend the first six months of the project in Madrid developing a joint research programme. An important part of this early leg of work will consist in setting up an online open source research environment – to hold video seminars, share documents, field notes, etc. – and a project website which will support our work throughout. The team will re-convene again in Madrid upon returning from fieldwork towards the end of Year 2. The last year of work will be dedicated to the tasks of comparison, analysis, writing-up and dissemination.

The **project's management** has been structured around **five key processes**: (i) the aforementioned online open source research environment, which will host our empirical materials, reports and analyses, links to relevant news and affinal websites, as well as enable periodical online meetings between team members during field work; (ii) a launching workshop, to be organized in Madrid six months into the start of the project. Attended by the IWG, the design of the case studies will be presented here. Researchers will also have an opportunity to discuss and network their way into their field sites with members of the IWG; (iii) upon retuning to Madrid towards the end of Year 2 the team will convene weekly for organisational meetings, where the progress of the various analyses will be contrasted and kept in focus; (iv) the IWG will be convened for a synthetic workshop in Madrid half-way through Year 3, in order to present our preliminary analyses and help the team focus on particular theoretical themes; (v) an international conference will mark the project's closure towards the end of Year 3, bringing together renowned academics from the world over, as well as professional practitioners, policy-makers and the project's key stakeholders. Separate funding will be sought towards the organisation of this event.

FEASIBILITY

The PI has over 15 years of research experience in urban environments and techno-scientific cultures, of which the last four have been dedicated to investigating the rise of open-source urban cultures in Madrid. He is widely networked into the open-source culture movement worldwide, forming part, for example, of the Association of Peer-to-Peer Researchers at the P2P Foundation, as well as into the global community of hacker and maker spaces. *Prototyping* (http://www.prototyping.es/), a blog curated by the PI and fellow Spanish anthropologist Adolfo Estalella, is widely recognized as a reference on open-source cultures in the Spanish-speaking world. He has also ample experience in the management of large and complex research and technical projects, having served as Dean at Spain's School for Industrial Organisation, the state's school for advanced public management, for two years.

Members of the IWG have all expressed keen interest in joining the project in the event of funding. Members are all well-known urban and/or STS scholars, whose detailed grasp of local intelectual and political dynamics, as well as close acquaintance with specific stakeholders (community activists, public intellectuals, advocacy groups, political representatives, local institutions, etc.) in Madrid, Buenos Aires and LA-San Francisco will prove an invaluable resource for networking team members into their respective field sites.

PROJECT TIMETABLE

The project is designed to take place over the course of three years. The synoptic table below summarizes the project's research and managerial milestones. A detailed calendar follows below.

	YEAR 1	YEAR 2	YEAR 3
Project management	Postdoc hired / Design open source research environment / Visas, travel permits / Month 6: postdocs depart for fieldwork	Regular virtual meetings / Comparing fieldnotes / Month 9: Postdocs return to Madrid	Production of project's reports / Networking & policy interventions
Research milestones	Design joint research programme / Launching workshop / Fieldwork: access, participant observation, social networks, life histories	Fieldwork: participant observation, archival work, interviews, large-scale comparative survey	Comparative framework / Data analyses, writing-up & dissemination / Synthetic workshop / Preparing monograph and editd collection / International conference

YEAR 1

September 2015 to March 2016 / 6 months / Madrid

International call for and recruitment of 1 postdoctoral fellow. Institutional access/network mapping exercise: use existing contacts to negotiate access to OSUI projects in Buenos Aires, Madrid and LA-San Francisco. Development of a joint research agenda and individual research programmes. Setting up a reading group: building a common bibliography, identifying topics and themes of potential interest. Setting-up an online open source research environment to help coordinate and work on the project at a distance. The online environment will be used throughout the project to hold video seminars (Google Hangouts), share documents, field notes and analyses; establish comparative frameworks; chat and talk online. A website will be designed and developed for the project.

March 2016 / Madrid

2-day launching workshop attended by the IWG: researchers will present the design of their case studies.

March 2016 to September 2016 / 6 months / Various field sites

Researchers travel to and settle down in Berkeley and Buenos Aires and launch mapping exercises: identify and negotiate access with key players. Postdoctoral researchers will make contact with UCLA's cityLAB and Berkeley's CED; and a77, Iconoclasistas and Colectivo Situaciones in Buenos Aires. By the end of this period of fieldwork, researchers will have identified and gained access to their key ethnographic communities: the projects, technologies and urban contexts they will be focusing on. They will have built up relationships of trust and confidence with the communities, and if necessary will undergo basic training on specific technical skills.

YEAR 2

September 2016 to December 2016 / 3 months / Various field sites

Intensive field research at each fieldwork site. Researchers will produce organisational analysis (organisational structure, financial reports and accounts, stakeholders) for every organisation studied at this stage, as well as build up archival and documentary repositories: on the histories and institutional origins of an OSUI project; a filing system, registry and preliminary index of the digital archives of those communities with an online presence (say, websites, blogs, videos, photographs, and, if available, laboratory notebooks); an archive of local news that speak to the project's concerns; an archive of an organisation's internal administrative documents (subject to permissions). They will have also identified local academic texts of relevance to the project and will begin compiling life histories on key actors.

December 2016 to March 2017 / 3 months / Various field sites

Intensive field research at each fieldwork site. Researchers will have mapped in detail the local landscape of media actors (state institutions, social movements, trade unions, autonomous collectives, academics, artists, citizens) that surround OSUI projects and will have completed a first round of interviews and biographical profiles of key informants. Pool findings across all three case studies and start designing a large-scale comparative survey.

March 2017 / 2 weeks / Various field sites

PI makes 1 week-long visit to each site to monitor and supervise fieldwork progress.

March 2017 to June 2017 / 3 months / Various field sites

Researchers wrap-up their ethnographic programmes: finalize interviews, life histories, archival research. The large-scale comparative survey is run across all three sites. Researchers return to Madrid.

June 2017 to September 2017 / 3 months / Various field sites

Development of framework for comparing the various projects' ethnographic data.

YEAR 3

September 2017 / 6 months / Madrid

Analysis, writing-up and dissemination activities for the project; production of case- and policy reports; presentation of research findings at conferences, seminars, workshops, and through various social media outlets and networks; submission of journal articles. Preparations for the synthetic workshop with IWG members.

March 2018

2-day synthetic workshop attended by the IWG: we will present our preliminary analyses and discuss and explore novel theoretical avenues.

March 2018 to September 2018 / 6 months / Madrid

Continue with the project's dissemination tasks: preparation and completion of monograph and edited volume; liaise with stakeholders and non-academic partners; enriching the online open-source environment; networking with policy- and think tanks.

September 2018 / Madrid

International conference to mark the project's closure. The conference will bring together social studies of science, anthropology and urban studies scholars, as well as professional practitioners, including architects, urban planners, policy-makers, and the project's stakeholders.

BUDGET OUTLINE AND JUSTIFICATION

The successful completion of the project will depend on an ambitious comparative study across three field sites. It will require resources to cover the following cost categories:

(i) personnel costs for hiring one post-doctoral researcher to carry out fieldwork in Buenos Aires. The postdoc will be hired on a 2yr contract. He or she will spend 6 months in Madrid preparing the research programme, 15 months in Buenos Aires carrying out fieldwork, and will return for a further 3 months to Madrid to help develop the comparative framework.

(ii) fieldwork costs, including expenses for travel, subsistence, accommodation, visas, research affiliations for the 3 core research-team members.

(iii) costs incurred in the organisation of events, including the launching and synthetic workshops to be attended by the IWG.

(iv) dissemination costs, including web and graphic design for the project's website and online open source research environment; costs of attending 1 international conference per year by every member of the research team.

(v) <u>equipment costs,</u> including digital cameras, voice digital recorders, and laptops for all three members of the research team; stationery and consumables to include field notebooks and memory sticks.

C.2. EXPECTED IMPACT

PROJECT OUTPUTS

The project will make breakthrough contributions to a number of fields, in academia but also in policy-circles and the global peer-to-peer movement.

In terms of **academic output**, it is expected that this will span across a number of disciplines, from urban studies to social studies of science and social anthropology, and will include at least: (i) <u>1 monograph</u> and <u>1 edited collection</u>, comparing and contrasting the *ecologies*, *experiments* and forms of *urban governance* afforded by do-it-yourself infrastructures across the three case studies; (ii) <u>7 articles in leading international peer-reviewed journals</u>, drawing on specific case materials from each city; (iii) <u>3 short pieces in professional newsletters or bulletins</u> (e.g. *Anthropology News*, *Anthropology Today*) reporting on the project's innovative framework, individual case-studies and overall general progress.

Central to the project is the notion of open-source infrastructure and here there is scope to have the project re-functioned as an open-source infrastructure itself. We will design and develop an **online open-source environment** (described above, under project management) that will function as both a repository for OSUI technical designs and specifications, licenses and public liability models, and stakeholder identities for every grassroots and DIY project under study. Moreover, this online environment will also enable cross-fertilizations and exchanges between community projects across the three case studies (and beyond). The PI has already participated in the design of a similar initiative, *Ciudad Escuela* (www.ciudad-escuela.org), which upon launching in April 2014 was hailed by Spanish and Latin American media as the first open-source urban pedagogy in the world.

DISSEMINATION PLAN

The plans for **disseminating** the project's findings are at the very heart of the project's design in the first place, for it is a *sine qua non* of open-source culture that every step in a research project must be documented, registered and shared with the community. The project's **website and online open-source environment** are therefore not simply digital outlets for communicating our progress, but play a central part in the very design of the project as an open-source infrastructure. These are tools that will play a crucial role in articulating the project's relation with its various stakeholder communities, both by giving voice to them and by networking them into open-source projects elsewhere.

The project's website will host a **blog**, with news bites and regular posts on research developments from each of the three cities. Having been Media and Publicity Officer for the Association of Social Anthropologists of the UK, and currently holding office as the Secretary of the European Association of Social Anthropologists, the PI has ample experience using and tapping into news and media outlets, as well as using **social media** (Facebook and Twitter) for disseminating and networking research findings.

From the point of view of **urban governance and policy**, the theoretical and empirical materials that will accrue from understanding OSUI will supply crucial policy insights into current debates on the infrastructural futures of urban sustainability. ECOBETA will **liaise**

with key players in the urban sustainability agenda (such as UN-HABITAT, Metropolis, ICLEI – Local Governments for Sustainability, European Commission Initiative on Smart Cities, Smart Cities Stakeholder Platform), as well as with local stakeholders, NGOs, think-tanks and universities in the selected field sites, communicating its findings and developing an engaged understanding of how urban systems respond to the dynamic assembling of social infrastructures. We will produce at least **2 policy reports** to be widely circulated in these fora. The project will likewise make available its policy reports and periodical progress updates to various open-source and peer-to-peer global networks, such as the P2P Foundation or P2P-LatAm.

C.3. RESEARCH TRAINING CAPACITIES

The PI, Alberto Corsín Jiménez, is a member of the research group 'World and worldly sciences' at CSIC's Department of the History of Science, created in 2013 as part of the re-organisation of CSIC's Social Sciences and Humanities Centre in Madrid. The members of the research group include Prof Antonio Lafuente, Prof Juan Pimentel and Prof Leoncio López-Ocón, making it one of the leading training centres in the history and social study of science and technology (STS) in Spain. The members of the group have established doctoral training frameworks with both Universidad Complutense and Universidad Autónoma de Madrid, which have resulted in the supervision of dozens of PhD dissertations over the past twenty years. For instance, José Ramón Marcaida, a recent doctoral student of Prof Juan Pimentel, was awarded in 2013 the prestigious Pérez E. Sánchez award from Fundación Focus-Abengoa for an outstanding contribution to the history of art. Furthermore, the group has an established research seminar at the Department of the History of Science, and Prof Antonio Lafuente and Alberto Corsín Jiménez run regular discussion groups on 'digital humanities' and STS-related topics at Medilab-Prado, perhaps Spain's leading citizen laboratory.

Alberto Corsín Jiménez has over 15 years of teaching experience. At the University of Manchester (2003-2009) he was Programme Director of the MA in Social Anthropology and supervised 4 PhD students, 6 MA students and well-over 30 undergraduate dissertations. In 2005 he was awarded €15000 from the University of Manchester's Teaching Quality and Enhancement Fund and the UK's Higher Education Academy towards the development of a pioneering course on teaching ethnographic methods.

Since arriving in Madrid, he has supervised 2 MA dissertations in the postgraduate programme on Culture, Communication and Citizenship at Universidad Rey Juan Carlos.

C.4. ETHICAL IMPLICATIONS

The ethical issues relevant to this research project concern questions of Privacy (observation and collection of personal data) and work carried out in non-EU countries (Argentina and the US). The issues all derive from the project's employment of a *qualitative social-scientific methodology*, and in particular the use of ethnographic fieldwork (also known as participant observation).

Ethnography is the dominant mode of anthropological research. It is a holistic approach that enables researchers to understand the complex, multifaceted and overlapping dimensions of social life. Thus, in its observation of and participation in the practice of everyday life, ethnographers are bound to witness people's relational negotiations of their political,

religious, gender or kinship views. Ethnographic inquiry does not look for "the political" in social life, but lets everyday life transpire a sociological form for "politics" itself. Ethnography does not therefore obtain data "about" people; it describes instead the processes and conditions that inform social relationships.

Ethnography, then, like social life itself, is an open-ended process, likely to take unexpected turns in its research enquiry and focus. Notwithstanding, anthropologists are obliged to maintain integrity and good conduct in the pursuit of research, and are indeed known for their enrichment of ethical discussions in the social sciences at large. The ethical practice of ethnography has been the subject of much debate within the discipline and is today sanctioned by the Ethical Guidelines for Good Research Practice of all professional associations, including for example the Association of Social Anthropologists of the UK and the Commonwealth (ASA) or the American Anthropological Association (AAA).

This research project abides by the principles for good research practice outlined in such Guidelines and Codes of Practice. Two ethical principles guide the work of anthropologists and of this research project in particular:

1. Participants should be made aware of the presence and purpose of the researcher whenever reasonably practicable.
2. Field notes and other forms of personal data are predominantly private to assure confidentiality and the anonymity of subjects. It is a duty of anthropologists to make sure that nothing they record or publish would contribute towards the identification of individuals that would put their wealth or security at risk.

Consent will be sought and negotiated with all informants throughout, although it is noted that some people are suspicious of formal bureaucratic procedures and therefore unlikely to fill-in and sign a printed consent form. As the ASA Guidelines put it, "Consent in ethnographic research is a process, not a one-off event, due to its long-term and open-ended qualities." (ASA 2011: 5)

Thus, data will be appropriately anonymised to protect privacy in accordance with EU legislation (EU Directive 95/46/EC), with particular attention to sensitive personal data collected in life histories, as well as that derived from the relations of trust built during the course of ethnographic fieldwork. Data pooled for the purposes of comparison and analysis will be coded and will not be traceable back to individuals.

Some of the groups of people we might be working with in Buenos Aires may be especially vulnerable due to their socio-economic circumstances. We will protect this vulnerability by working with local research groups with extensive ties and prior relations with these communities. We will further make sure to share the benefits of our work with these communities, both by sharing our findings and by giving them voice in stakeholder workshops and policy forums.

On the whole, then, the topic of this research project does not in principle present a challenging or problematic ethical scenario for any of the questions raised in the Ethical Issues Table.

Previous experience of work with open-source communities does reckon, however, some potential conflicts or tensions over the nature of transparency and public information. Open-source communities are known for their radical endorsement of methodological transparency: open-source is all about making things public and open. In the name of 'transparency' it is not unknown, for instance, for some members of an OS community to demand ethnographers to share their field notes. Such demands are more often than not countered by other members of the community, who draw a difference between 'methodological data'

and 'social relations'. They call for opening access to the former, but understand that the latter may be inflected by questions of anonymity, confidentiality and trust.

However, the tension itself does point to the value of ethnography as a tool for 'figuring out' the shifting status of the ethical in contemporary research practice. In practical terms, it signals to changing perceptions of research and science as public goods. As the ASA Guidelines puts it, in slightly anticipatory tone, "In the longer term, it might be proper to make available fieldnotes and other research material for use by other researchers e.g. by including them in relevant archives." (ASA 2011: 6) The Association's advice is for researchers to take care in how data is recorded. A larger question, which in a sense is a central research question of the project itself, is how to describe the ethics of research practice and knowledge when its public value is taken as a *matter of fact* – as open data?

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INSTRUCCIONES PARA RELLENAR LA MEMORIA CIENTÍFICO-TÉCNICA

AVISO IMPORTANTE

En virtud del artículo 11 de la convocatoria **NO SE ACEPTARÁN NI SERÁN SUBSANABLES MEMORIAS CIENTÍFICO-TÉCNICAS** que no se presenten en este formato.

Este documento está preparado para que pueda rellenarse en el formato establecido como obligatorio en las convocatorias (artículo 11.7.a): letra Times New Roman o Arial de un tamaño mínimo de 11 puntos; márgenes laterales de 2,5 cm; márgenes superior e inferior de 1,5 cm; y espaciado mínimo sencillo. La parte C ("Documento científico") de la memoria deberá tener una extensión máxima de 20 páginas, incluidos todos sus apartados. No se admitirán memorias con contenidos propios de la parte C incluidos en las partes A o B.

La memoria consta de tres partes: la parte A contiene información general y básica de la propuesta; la parte B contiene la relación de los componentes del equipo de trabajo (excepto doctores) y la información específica sobre la financiación pública y privada del equipo de investigación; y la parte C es el documento científico propiamente dicho.

Con carácter general:

1. Las memorias pueden rellenarse en español o en inglés, a excepción de la parte A: RESUMEN DE LA PROPUESTA/SUMMARY OF THE PROPOSAL, que debe rellenarse en ambos idiomas.
2. Se recomienda rellenar la memoria empleando un ordenador con sistema operativo Windows y usando como procesador de textos MS Word (MS Office).
3. Una vez terminada la memoria en Word, deberá convertir el archivo en formato pdf (de no más de 4Mb) y aportarlo en la aplicación informática de solicitud del proyecto en el apartado Añadir documentos > Memoria científico-técnica.

Parte A: RESUMEN DE LA PROPUESTA/SUMMARY OF THE PROPOSAL

Toda la información de este apartado deberá también rellenarse en la aplicación de solicitud para que los campos puedan explotarse informáticamente, aunque se incluyen también en la memoria para facilitar las tareas de evaluación. Se aconseja que se utilice el *copiar* y *pegar* desde la memoria hasta la aplicación informática de solicitud o viceversa para que no haya inconsistencias en el contenido de los textos.

Todos los campos de este apartado deberán rellenarse obligatoriamente en inglés y en español.

El resumen de la propuesta/summary of the proposal (con un máximo de 3500 caracteres, contando los espacios en blanco) contendrá los aspectos más relevantes de la propuesta, así como los objetivos planteados y los resultados esperados. Su contenido podrá ser publicado a efectos de difusión si el proyecto fuera financiado en esta convocatoria, salvo que haya indicado expresamente en la aplicación de solicitud que existen resultados susceptibles de ser protegidos.

Parte B: INFORMACIÓN ESPECÍFICA DEL EQUIPO

B.1. RELACIÓN DE LAS PERSONAS NO DOCTORES QUE COMPONEN EL EQUIPO DE TRABAJO

<u>No se relacionarán</u> en este apartado los datos del personal perteneciente <u>al equipo de investigación ni los datos de los doctores pertenecientes al equipo de trabajo</u>, puesto que esas personas deberán incluirse en la aplicación informática de solicitud.

Deberán rellenarse los siguientes datos del personal perteneciente al equipo de trabajo, excepto los doctores, repitiendo la secuencia que se indica a continuación tantas veces cuantas se necesite. En los campos de titulación, tipo de contrato y duración del contrato deberá tachar o borrar las claves que no procedan.

1. Nombre y apellidos:
   Titulación: licenciado/ingeniero/graduado/máster/formación profesional/otros (especificar)
   Tipo de contrato: en formación/contratado/técnico/entidad extranjera/otros (especificar)
   Duración del contrato: indefinido/temporal

B.2. FINANCIACIÓN PÚBLICA Y PRIVADA (PROYECTOS Y CONTRATOS DE I+D+I) DEL EQUIPO DE INVESTIGACIÓN

Deberá relacionar los proyectos y/o contratos de I+D+I en los que hayan participado los componentes del equipo de investigación y que hayan recibido financiación o que estén pendientes de resolución, en los últimos <u>8 años</u>, en convocatorias de ámbito nacional, autonómico o internacional hasta un <u>máximo de 10 proyectos y/o contratos</u>. Si la relación fuera muy extensa, se recomienda seleccionar aquellos que estén más directamente relacionados con la propuesta que se presenta.

Deberán rellenarse los siguientes datos repitiendo la secuencia que se indica a continuación tantas veces como se necesite. En los campos de relación temática con el proyecto que se presenta y estado del proyecto o contrato deberá tachar o borrar las claves que no procedan:

1. Investigador del equipo de investigación que participa en el proyecto/contrato (nombre y apellidos):
   Referencia del proyecto:
   Título:
   Investigador principal (nombre y apellidos):
   Entidad financiadora:
   Duración (fecha inicio - fecha fin, en formato DD/MM/AAAA):
   Financiación recibida (en euros):
   Relación temática con el proyecto que se presenta: mismo tema/está muy relacionado/está algo relacionado/sin relación
   Estado del proyecto o contrato: concedido/pendiente de resolución

Parte C: DOCUMENTO CIENTÍFICO

La parte C de la memoria científico-técnica es la única que está limitada en cuanto a extensión. Los cuatro apartados de la parte C no podrán superar las 20 páginas, debiendo mantenerse además los márgenes, espaciado y tipo de letra establecidos en la convocatoria. Se recuerda que no se admitirán memorias con contenidos propios de la parte C incluidos en otras partes del documento. En su caso, los anexos, imágenes, tablas, fórmulas, etc. estarán incluidos en la parte C.

C.1. PROPUESTA CIENTÍFICA

Se recomienda incluir:

1. Los **antecedentes y estado actual** de los conocimientos científico-técnicos de la materia específica del proyecto, incluyendo, en su caso, los resultados previos del equipo de investigación y la relación, si la hubiera, entre el grupo solicitante y otros grupos de investigación nacionales y extranjeros.

Si el proyecto es continuación de otro previamente financiado, deben indicarse con claridad los objetivos y los resultados ya alcanzados de manera que sea posible evaluar el avance real que se propone en el nuevo proyecto. Si el proyecto aborda un tema nuevo, deben indicarse los antecedentes y contribuciones previas del equipo de investigación que justifiquen su capacidad para llevarlo a cabo.

2. La **hipótesis de partida** y los **objetivos generales** perseguidos, así como la **adecuación** del proyecto a la Estrategia Española de Ciencia y Tecnología y de Innovación y, en su caso, a Horizonte 2020 o a cualquier otra estrategia nacional o internacional de I+D+i.

Si la memoria se presenta a la convocatoria de RETOS, deberá identificarse el reto cuyo estudio se pretende abordar y la relevancia social o económica prevista.

3. Los **objetivos específicos**, enumerándolos brevemente, con claridad, precisión y de manera realista (acorde con la duración prevista del proyecto).

En los proyectos con dos investigadores principales, deberá indicarse expresamente de qué objetivos específicos se hará responsable cada uno de ellos.

4. El detalle de la **metodología** propuesta, incluyendo la viabilidad metodológica de las tareas. Si fuera necesario, también se incluirá una evaluación crítica de las posibles dificultades de un objetivo específico y un plan de contingencia para resolverlas.

5. La descripción de los **medios materiales, infraestructuras y equipamientos singulares** a disposición del proyecto que permitan abordar la metodología propuesta.

6. Un **cronograma** claro y preciso de las fases e hitos previstos en relación con los objetivos planteados en la propuesta.

7. Si se solicita ayuda para la **contratación de personal, justificación** de su necesidad y descripción de las tareas que vaya a desarrollar.

C.2. IMPACTO ESPERADO DE LOS RESULTADOS

El contenido de este apartado se solicitará también en la aplicación informática de solicitud (con un máximo de 3500 caracteres) y su contenido podrá ser publicado a efectos de difusión si el proyecto fuera financiado en esta convocatoria.

Se recomienda incluir:

1. Descripción del **impacto científico-técnico social y/o económico** que se espera de los resultados del proyecto, tanto a nivel nacional como internacional.

2. El **plan de difusión** e internacionalización en su caso de los resultados.

3. Si se considera que puede haber **transferencia de resultados**, se deberán identificar los resultados potencialmente transferibles y detallar el plan previsto para la transferencia de los mismos.

C.3. CAPACIDAD FORMATIVA DEL EQUIPO SOLICITANTE

Este apartado solo se rellenará si se solicita la inclusión del proyecto en la convocatoria de "Contratos predoctorales para la formación de doctores". Dicha inclusión solo será posible en un número limitado de los proyectos aprobados.

Para evaluar la capacidad formativa del equipo solicitante, se recomienda incluir:

1. El **plan de formación previsto** en el contexto del proyecto solicitado.

2. Relación de tesis realizadas o en curso (últimos 10 años) con indicación del nombre del doctorando, el título de tesis y la fecha de obtención del grado de doctor o de la fecha prevista de lectura de tesis.

3. Breve **descripción del desarrollo científico o profesional de los doctores egresados** del equipo de investigación.

C.4. IMPLICACIONES ÉTICAS Y/O DE BIOSEGURIDAD

Este apartado solo se rellenará si en la aplicación electrónica de solicitud se contesta afirmativamente a alguno de los aspectos relacionados con implicaciones éticas y/o de bioseguridad allí recogidos.

Se recomienda incluir:

1. Una **descripción de los aspectos éticos** referidos a la investigación que se propone.

2. Una explicación de las **consideraciones, procedimientos o protocolos** a aplicar en cumplimiento de la normativa vigente, así como una descripción de las instalaciones y las preceptivas autorizaciones de las que se dispone para la ejecución del proyecto.