# Semantic Web Research @ NRCC

Nokia Research Center has been engaged in Semantic Web research since 1996, and has contributed to all of the major standards in this area.

Our research has mostly focused on the use of Semantic Web technologies in mobile and ubiquitous computing; some of the results include:

* implementing *context-aware* system behavior using semantic models of contexts,

* using *Semantic Web services* to enable fully automatic composition and substitution of component functions in dynamically changing conditions,

* generating optimized and context-aware *user interfaces* automatically from Web service descriptions; optimizing these user interfaces for small screens,

* exploring the use of *semi-structured graph queries* in semantic data access and reasoning, and

* combining a *reasoner* with a *browser* for Semantic Web data.

Software that can do more *on behalf of* its users will be critical to future mobile and handheld systems.

Scientific American May 2001 brought the Semantic Web into public view
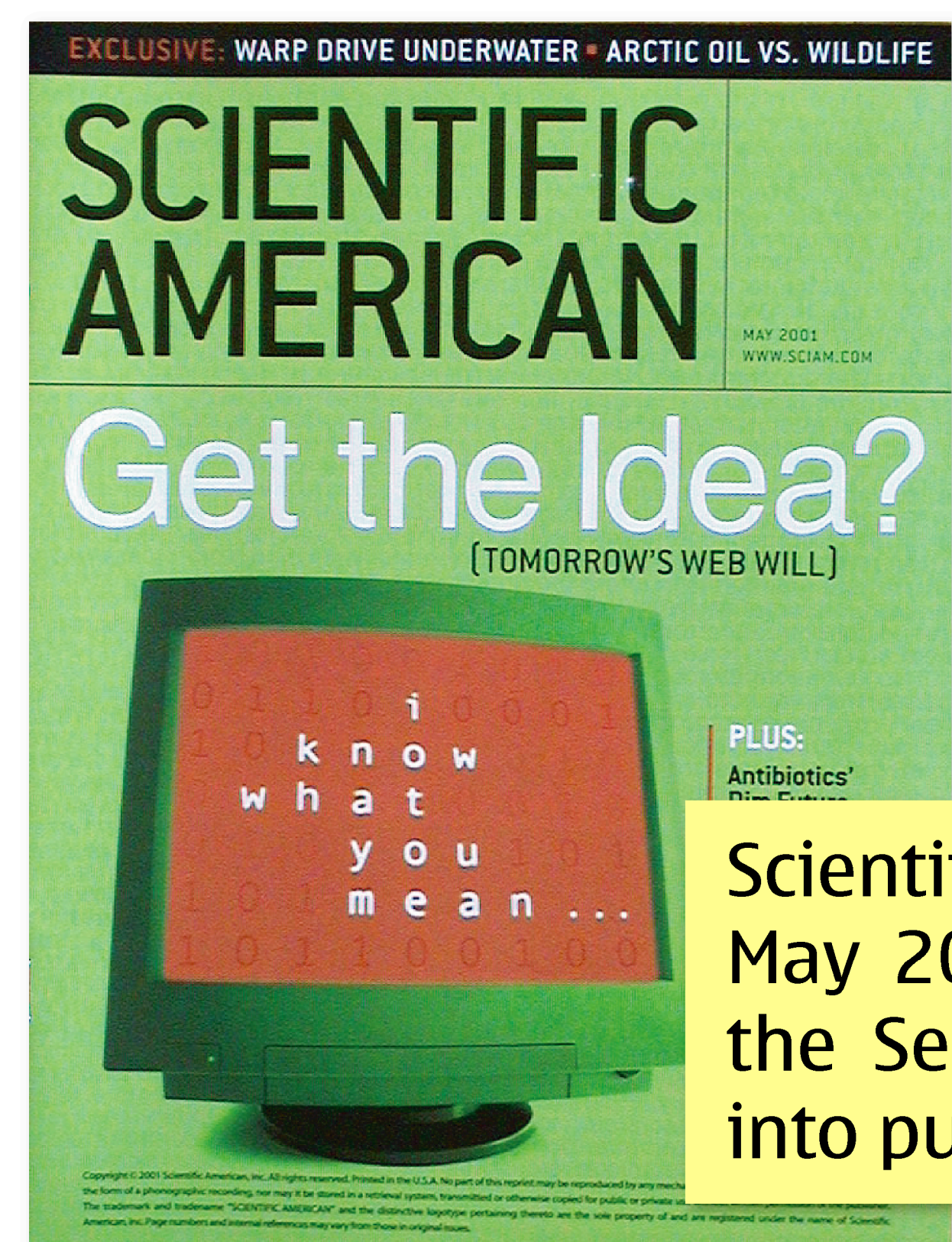
The Semantic Web represents the "next generation" of the WWW, typically characterized by the association of accessible formal semantics with content and services.

Semantic Web provides highly flexible data formalisms which – when combined with logical reasoning and automated planning – enable the serendipitious use and combination of new (as well as newly discovered) information sources.

Nokia Research Center has been a principal contributor to some of the seminal documents in this area:

O.Lassila & R.Swick: **"Resource Description Framework (RDF) Model and Syntax Specification"**, W3C Recommendation, February 1999

T.Berners-Lee, J.Hendler & O.Lassila, **"Semantic Web"**, Sci. American, May 2001

A.Ankolekar, M.Burstein, J.Hobbs, O.Lassila, D.McDermott, D.Martin, S.McIllraith, S.Narayanan, M.Paolucci, T.Payne & K.Sycara. **"DAML-S: Web Service Description for the Semantic Web"**, Proc. ISWC 2002

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