A light-weight secure protocol for small data dissemination in WSNs

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Abstract. This paper argues for a security scheme for security of WSNs, Wireless sensor networks. Our scheme is designed to be simple as well as have little impact on memory consumption and network traffic. The scheme is designed in light of issues derived from many different kind of attack.

Key words: Data discovery and dissemination, security, wireless sensor networks, efficiency

1 Network, Trust And Threat Models

As shown in Fig. 1(b), Wsns consists of a lot of distrubited sensor nodes, manys network users and only a owner. This is a very simple and easy structure. The network uses use mobile devices such as PDAs and mobile phone to control the whole WSNs. The Network owner may be off-line, who has bootstrapped the keying materials for the mobile devices to enforce reprogramming privilege policy. It is assumed that the owner cannot be compromised by enemy or attacker and still has some capability of doing some computation and judgement, such as hash operation and a lot of other cryptography techniques. We assume Deluge as the underlying code dissemination protocol. We also assume sensor nodes, for example using the scheme of [19]. To enable each node to check whether the subscription period of each authorize user has expired, we assume there is a loose time synchronization among the nodes with the help of some existing secure time synchronization scheme. We assume there is a loose time synchronization among the nodes with the help of some existing secure time synchronization scheme.

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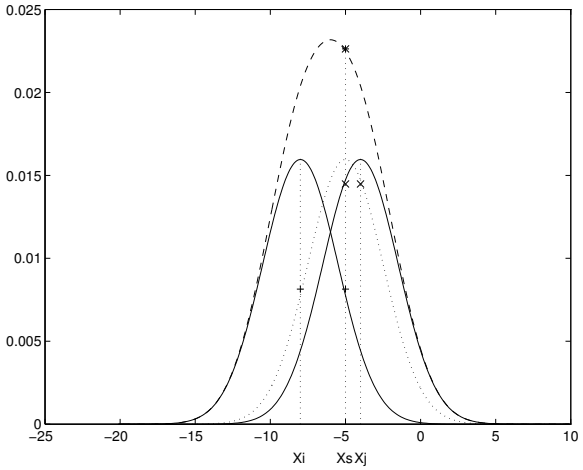

Fig. 1. One kernel at x_s (*dotted kernel*) or two kernels at x_i and x_j (*left and right*) lead to the same summed estimate at x_s. This shows a figure consisting of different types of lines. Elements of the figure described in the caption should be set in italics, in parentheses, as shown in this sample caption.

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Example of a Computer Program

```
program Inflation (Output)
  {Assuming annual inflation rates of 7%, 8%, and 10%,...
   years};
   const
     MaxYears = 10;
   var
     Year: 0..MaxYears;
     Factor1, Factor2, Factor3: Real;
   begin
     Year := 0;
     Factor1 := 1.0; Factor2 := 1.0; Factor3 := 1.0;
     WriteLn('Year  7% 8% 10%'); WriteLn;
     repeat
       Year := Year + 1;
       Factor1 := Factor1 * 1.07;
       Factor2 := Factor2 * 1.08;
       Factor3 := Factor3 * 1.10;
       WriteLn(Year:5,Factor1:7:3,Factor2:7:3,Factor3:7:3)
     until Year = MaxYears
end.
```

(Example from Jensen K., Wirth N. (1991) Pascal user manual and report. Springer, New York)

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