```
mk-es_wf  THM

⊢  ∀E:Type, eq:EqDecider(E), T,V:(Id→Id→Type), M:(IdLnk→Id→Type),
|   loc:(E→Id), k:(E→Knd), v:(e:E→eventtype(k;loc;V;M;e)),
|   w,a:(x:Id→e:E→T(loc(e),x)),
|   snds:(l:IdLnk→E→(Msg_sub(l; M) List)),
|   sndr:({e:E| isrcv(k(e)) }→E),
|   i:(e:{e:E| isrcv(k(e)) }→ℕ||snds(lnk(k(e)),sndr(e))||), f:(E→𝔹),
|   prd:({e':E| ¬f(e') }→E), cl:(E→E→Prop), p:ESAxioms{i:l}
|                                                           (E;
|                                                            T;
|                                                            M;
|                                                            loc;
|                                                            k;
|                                                            v;
|                                                            w;
|                                                            a;
|                                                            snds;
|                                                            sndr;
|                                                            i;
|                                                            f;
|                                                            prd;
|                                                            cl).
|  mk-es(E; eq; T; V; M; loc; k; v; w; a; snds; sndr; i; f; prd; cl; p
|        )
|  ∈ ES
| by let tacs
|        ≡ [Trivial
|          ;Reduce 0
|          ;Auto THEN Analyze -1 THEN Unhide THEN Complete Auto] in
|    Auto THEN Try (Analyze -1 THEN Unhide THEN Complete Auto)
|    THEN
|    Unfolds [`mk-es`;`event_system`] 0
|    THEN
|    Analyze
|    THEN
|    All (Unfold `event_system_typename`)
|    THENL
|    tacs
|    THEN
|    Repeat (Analyze THENL tacs)
|
.....subterm .....
1. E : Type
2. EqDecider(E)
3. T : Id→Id→Type
4. V : Id→Id→Type
5. M : IdLnk→Id→Type
6. loc : E→Id
7. k : E→Knd
8. v : e:E→eventtype(k;loc;V;M;e)
9. w : x:Id→e:E→T(loc(e),x)
10. a : x:Id→e:E→T(loc(e),x)
11. snds : l:IdLnk→E→(Msg_sub(l; M) List)
12. sndr : {e:E| isrcv(k(e)) }→E
```

```
13. i : e:{e:E| isrcv(k(e)) }→ℕ||snds(lnk(k(e)),sndr(e))||
14. f : E→𝔹
15. prd : {e':E| ¬f(e') }→E
16. cl : E→E→Prop
17. ESAxioms{i:l}
            (E; T; M; loc; k; v; w; a; snds; sndr; i; f; prd; cl)
⊢  · ∈ Top  by Auto
END
```